ORDER NO: VRD-8107-886

Service Manual

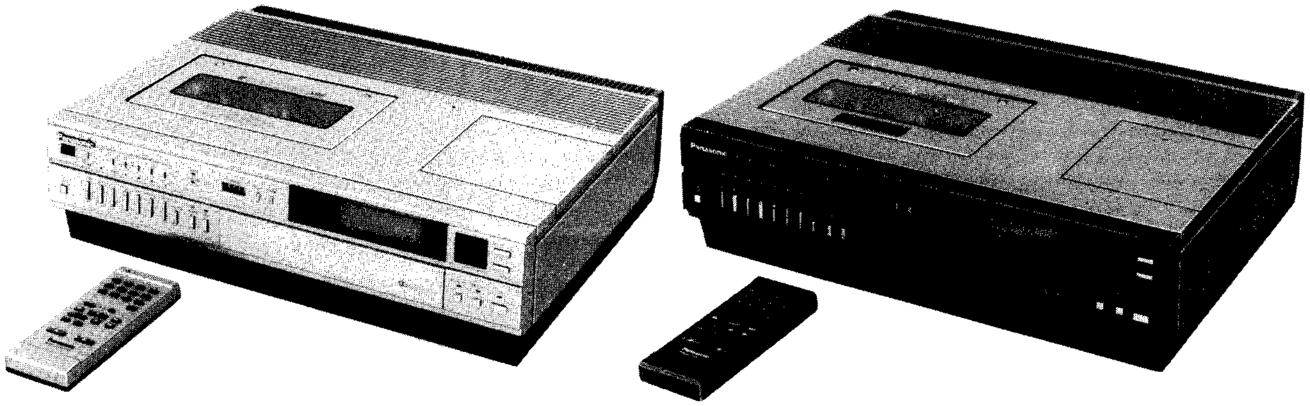
Video Cassette Recorder

Panasonic VHS

NV-7200-E -EG -B

Vol. 1

Summary Operating Instructions



SPECIFICATIONS

Power Source: NV-7200-E, -EG, 220V, AC, 50/60Hz
NV-7200-B, 240V, AC, 50/60Hz
Power Consumption: Approx. 52 watts
Television System: CCIR: 625 lines, 50 fields
PAL colour signal
Video Recording System: 2 rotary heads, helical scanning system
Luminance: FM azimuth recording
Colour signal: converted subcarrier phase shift recording
Audio Track: 1 track
Tape Format: Tape width 12.7mm high density tape
Tape Speed: 23.39mm/s
Record/Playback Time: 180 min. with NV-E180
240 min. with NV-E240
FF/REW Time: Less than 4.5 min. with NV-E180
Heads Video: 2 rotary heads
Audio/Control: 1 stationary head
Erase: 1 full track erase
1 Audio track erase
Input Level: Video: VIDEO IN connector (BNC)
1.0Vp-p, 75Ω unbalanced
Audio: MIC IN jack
−70dB, 3.9kΩ (Input impedance)
unbalanced (M6)
LINE IN jack
−20dB, 50kΩ unbalanced (RCA)

Output Level: Video: VIDEO OUT connector (BNC)
1.0Vp-p, 75Ω unbalanced
Audio: LINE OUT jack
−6dB, 600Ω (Output impedance)
unbalanced (RCA)
RF Modulated: UHF channel 36 (±4)
75Ω unbalanced
Weight: 11.5kg
Dimensions: 480(W)×136(H)×356(D)mm
Accessories Supplied: 1 pc. Video cassette tape, NV-E120
1 pc. DIN-DIN coaxial cable, VJA0130
1 pc. Dust cover, VFB0008
1 pc. Infrared remote control unit,
VSQ0185 (silver)
VSQ0186 (black)
Optional Accessories: Video cassette tape:
NV-E240 Approx. 344m, 240 min.
NV-E180 Approx. 258m, 180 min.
NV-E120 Approx. 174m, 120 min.
NV-E60 Approx. 88m, 60 min.
Video camera, WV-3030E
Microphone

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

INTRODUCTION

This service manual contains technical information which will allows service technicians to understand and service the Panasonic PAL VHS Video Tape Recorder Model NV-7200E/B/EG.
The NV-7200E/B/EG has many special features as shown below.
These features in addition to the basic PAL VHS Format make the unit an ideal one for your culture and entertainment.

FEATURES

1. **Infrared remote control**
   The remote control unit included enables the following 24 functions to be performed at a distance from the recorder unit: recording, playback stop, fast-forward, rewind, fast-forward playback (cue), review, pause (still-playback), still-frame advance, double-speed, slow-motion, and channel selection (with direct selection for 12 CHs).
2. **Cue/Review operation**
   You can locate a desired section with ease as you view the playback picture at 9 time normal speed in forward or reverse direction.
3. **Recording one programme while watching another**
   The built-in tuner allows you to record a programme that you don't want to miss while watching another programme.
4. **Audio Dubbing**
   You can erase the audio track at any point in the tape and record the new sound onto the existing video portion.
5. **12 channel up-down selector/LED channel indicator**
   Light-emitting diodes gives a clear readout of selected channel. When pressing the up or down button, you can easily find the desired channel.
6. **14 days 4 programmable timer**
   The built-in timer allows you to record TV programmes up to two weeks ahead. 4 different programmes may be recorded and there is also an everyday recording facility.
7. **Automatic rewind**
   At the end of the tape, the unit will stop and rewind the tape to its beginning or to the zero stop counter position (except timer recording).
8. **Fine editing function**
   The recorder eliminates the editing problem common to ordinary VTRs. When a recording is paused, the tape will be automatically rewound slightly to enable the next recording to be added. Thus cutting to a minimum any interference and ensuring smooth continuity between recordings.
9. **4 hours recording/playback possible with cassette tape NV-E240**
   Thanks to the development of a new system for high-density recording of video signals, recordings as long as 4 hours in length on a single tape are possible.
10. **Dolby Noise-Reduction System***
    For reduction of unwanted noise in the audio signal.

*'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

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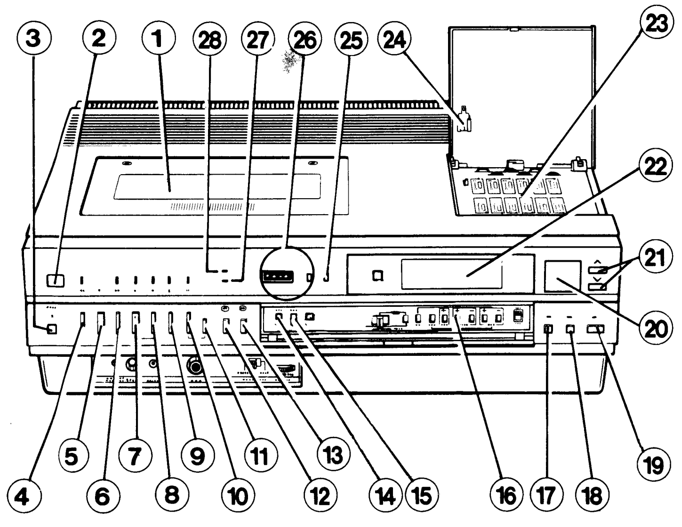
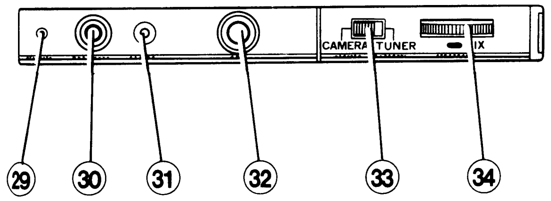
CONTROLS AND COMPONENTS

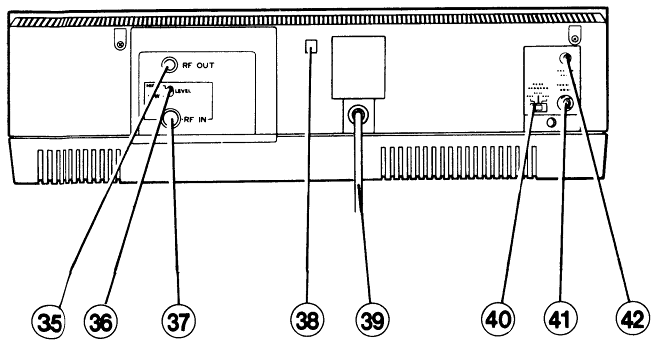
TOP and FRONT



(Behind the Front Cover; slide lid to the right for access.)



REAR



FUNCTION OF CONTROLS AND COMPONENTS

① Cassette Holder
For insertion of a video cassette.

② Remote Control Signal Receiver Window
When operating with the infrared remote controller it should be directed at this window.

③ Eject Button
Push to raise the Cassette Holder. The power must be turned on when inserting or removing the cassette tape.

④ Rewind Button
Push to rewind the tape.

⑤ Stop Button
Push to stop the tape.

⑥ Fast Forward Button
Push to fast-forward wind the tape.

⑦ Play Button
Push to play back a recorded tape.

⑧ Record Button
Push together with Play Button to start recording.

⑨ Audio Dubbing Button
Push together with the Play Button to start audio dubbing.

⑩ Pause Button
Push to temporarily stop the tape during recording in order to avoid recording unwanted material, or to view a still-frame picture during playback. Push again to release the tape from pause.

⑪ Still Frame Advance Button
Push to advance the image one frame at a time when the unit is in the still frame playback operation mode.
When this button is pushed and then held, the tape is played back at 1/6 of normal speed.

⑫ Review Button
When this button is pressed during playback, the video image will play back in reverse at 9 times normal speed. The review playback will continue as long as the button is depressed.

⑬ Cue Button
When this button is pressed during playback, the video image will play back at 9 times normal speed. Cueing will continue as long as the button is depressed.

⑭ Slow Motion Button
Push this button during playback. The tape speed is slowed to one half of its normal speed. (No audio will be heard.) To resume normal playback, push Play Button.

⑮ Double Speed Play Button
Push this button during playback. The tape speed is twice its normal speed. To resume normal playback, push Play Button.

⑯ Digital Clock/Timer Controls
The digital clock displays the time. The timer controls are used to set the clock for the present time and to programme start and stop times for timer recording.

⑰ Dolby Noise-Reduction Switch/Indicator Lamp
When set to the "IN" position (indicator lamp illuminates) during recording and playback, the Dolby Noise-Reduction Circuitry will function, giving recording and playback sound with less noise. For playback without using the Dolby Noise-Reduction System, set this switch to OUT.

⑱ Timer Rec Switch/Indicator Lamp
Push after programming the unit for timer recording. When this switch is on, you CANNOT operate the unit manually.

⑲ VTR Switch
Turns the recorder on and off.
•The Digital Clock will operate regardless of the position of this switch.

⑳ Channel Indicator
Indicates the channel number.

㉑ Up and Down Buttons
Press to change the channel upward or downwards.

㉒ Programmable Clock/Timer
This built-in programmable clock/timer constantly displays the time of day and is used for timer recording.

㉓ Tuning Controls
Used to tune to any broadcast channel in your area.

㉔ Automatic-Frequency-Control Switch
To ensure optimum tuning the automatic frequency control switch should be left in the "ON" position.
When the cover of the tuning controls is opened the AFC is automatically OFF.

㉕ Memory Switch
When this switch is turned on, the tape will automatically stop rewinding just past the point where the Tape Counter ㉖ was previously set to "0000".
*The tape will not stop at this point during review playback.

㉖ Tape Counter/Reset Button
The counter indicates how far the tape has moved. Push the reset button to reset the tape counter to "0000".

㉗ Camera Input Indicator Lamp
Illuminates when the Input Signal Selector is set to CAMERA.

㉘ Moisture Indicator Lamp
Lights up if excessive moisture condenses inside the unit. The unit WILL NOT operate while this lamp is on: If this happens, leave the unit ON, and let it remain at room temperature until the lamp goes off. The timer required varies with the environment, but the moisture will disappear within a few hours.

㉙ Camera Remote Pause Jack
For connection of a remote-control cable from a video camera.

㉚ Video Input Connector
For connection of a video camera or other video input signal to be recorded.

㉛ Audio Input Jack
For connection of a video camera or other audio input signal to be recorded.

㉜ Microphone Input Jack
For connection of a microphone to record sound onto the tape.

㉝ Input Signal Selector
Used to select between the two incoming signals from which recordings can be made.
1) In the "CAMERA" position, the signal which is connected to the Video Input Connector and the Audio Input Jack will be recorded.
2) In the "TUNER" position, the signal from the built-in tuner will be recorded.

㉞ Tracking Control

Noisy Picture

Should tapes recorded on another machine show noise or a streaky playback picture rotate this control slowly in either direction until the picture is clear. The control should normally be kept in the "FIX" position.

㉟ RF Output Connector
For connection to the antenna terminal (COAXIAL type) of TV with the DIN-DIN Coaxial Cable supplied with the unit.

㊱ RF Signal Level Switch
Used to attenuate the reception of the VHF and/or UHF antenna signals.
If the reception is normal, set to "HIGH". If the signal strength is high and the stripped pattern appears at the top of the picture on TV, set to "LOW".

㊲ RF Input Connector
For connection with the external aerial.

㊳ RF Converter Channel Selector
The built-in RF converter allows playback of video tapes on a standard TV receiver.

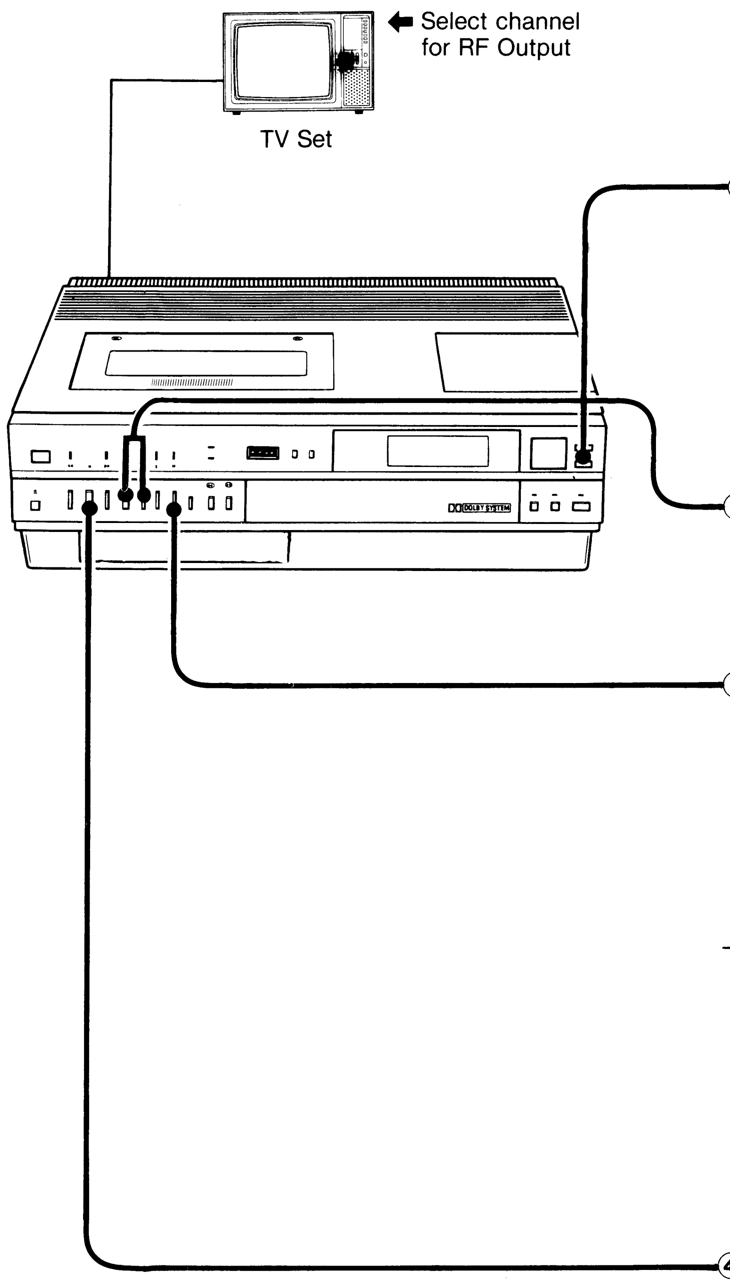
㊴ AC Power Cord

㊵ Colour Mode/Test Signal Switch
This switch has the following two functions:
(1) to tune the TV to the RF output channel and (2) to stabilize the colour image during recording or playback.
The switch should normally be set to the "AUTO" position.

To stabilize the colour image:
Move this switch to "COLOUR" to make a stable colour recording in a place where the supplied current is extremely low.
For playback, this switch must be in "COLOUR".

㊶ Video Output Connector,
㊷ Audio Output Jack
For connection to a TV monitor or another Video Cassette Recorder. Not used with an ordinary TV.

RECORDING



Prepare for recording as follows:

- ● Turn TV on and select the RF output channel.
- ● Turn the unit on.
- ● **Timer Rec Switch is OFF.**
- ● Insert a cassette.
- ● **Set Input Signal Selector to "TUNER".**

① **Select a channel to be recorded** and confirm proper reception on TV.
Adjust fine tuning on the unit or your TV if necessary: when a channel does not provide satisfactory reception...
Check the picture quality of each channel by pressing UP or DOWN Buttons on the unit. If the picture is not satisfactory on any of channels, adjust RF output channel by fine tuning control on TV. If just one or two channels are unsatisfactory, adjust by turning Fine Tuning Controls on the unit.

② Push **RECORD Button** together with **PLAY Button** to start recording. Your TV does not have to be on to make a recording because the unit will record a TV programme without the aid of your TV. Its use is for confirming reception or monitoring.

③ Push **PAUSE Button** to temporarily stop the tape if you wish to avoid recording unwanted material.
Push again to release the tape from pause.
Always use PAUSE Button to obtain proper recording continuity, but don't pause for more than 5 minutes. If the pause mode continues for more than 5 minutes, the unit will be automatically released from the pause and stop in order to protect the tape and the video heads.

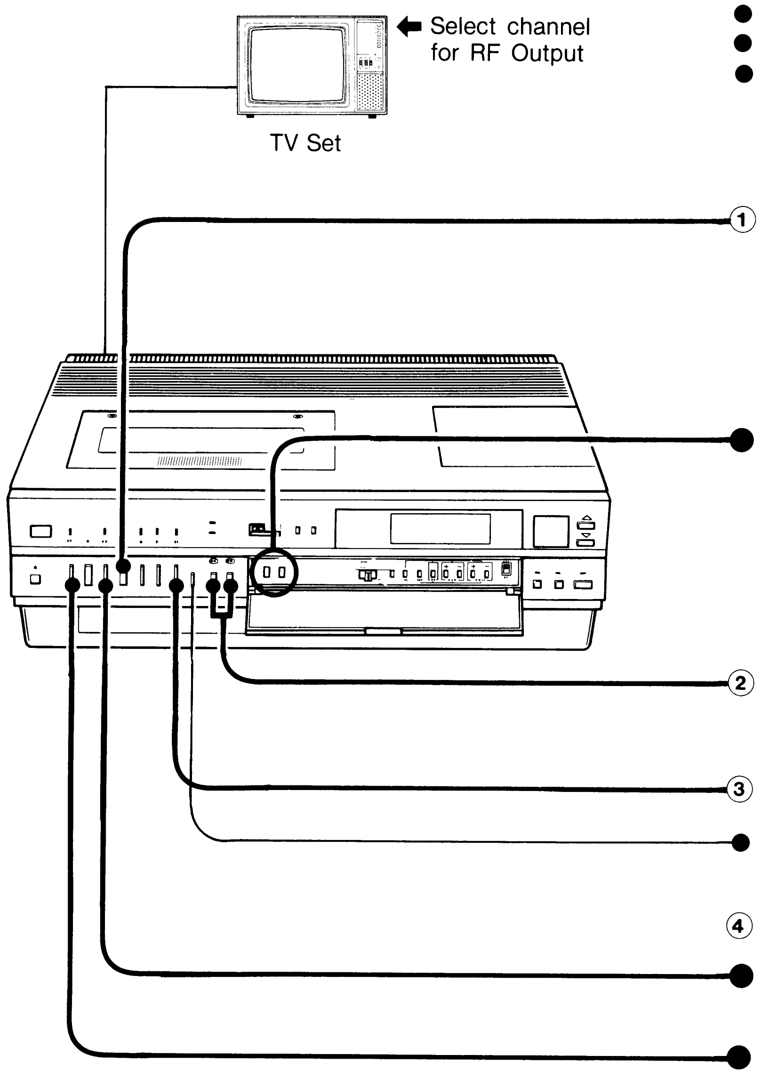
— To obtain proper continuity when taping from the stop mode or when STOP Button has been pushed accidentally:
1. Play back the last part of the already recorded material in order to confirm its end point, and then push PAUSE Button.
2. Push RECORD Button. (The unit is still in the pause mode.)
3. Push PAUSE Button to start recording.

④ Push **STOP Button** to stop recording.

RECORDING ONE TV PROGRAMME WHILE WATCHING ANOTHER
When you wish to view another channel during recording, select the desired channel on your TV.

Note:
- **Channel cannot be changed during recording (except pause).**

PLAYBACK



Prepare for playback as follows:

- ● Turn TV on and select the RF output channel.
- ● Turn the unit on.
- ● **Timer Rec Switch is OFF.**
- ● Insert the recorded cassette.

① Push **PLAY Button.**
Adjust **TRACKING Control** on the unit or fine-tune your TV if necessary. See page 1-3.

● During playback, push **x½** or **x2 Button** to view a slow-motion (half speed playback), double speed playback picture.
To resume normal playback, push PLAY button.

② During playback depress **CUE/REVIEW Button** to view the playback picture at approximately 9 times the normal speed.

③ Push **PAUSE Button** to view a still-frame picture.

● During pause, push **STILL ADV Button** to advance the image one frame at a time.

④ Push **PAUSE Button** again to release the tape from pause.

● Push **FAST FORWARD Button** to fast-forward wind the tape.

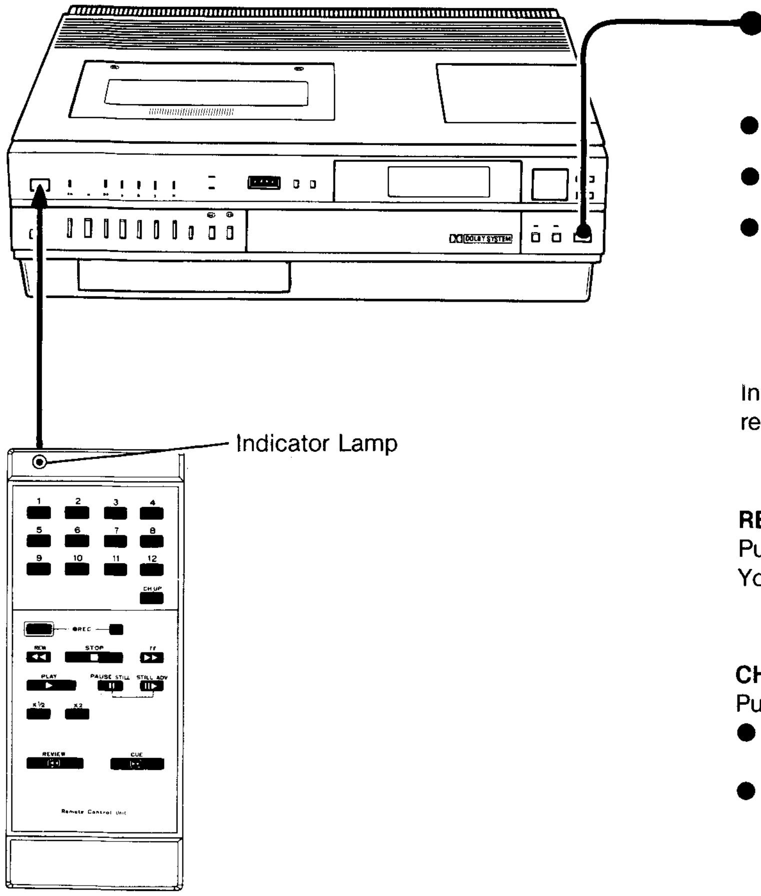
● Push **REWIND Button** to rewind the tape.

⑤ Push **STOP Button** to stop playback.

Notes:
- Interference bars can appear on the TV during slow-motion, double speed, cue/review and still frame playback.
- Audio will not be heard during slow-motion, cue/review and still frame playback.
- The PAUSE will automatically be released after approx. 5 minutes, and the recorder will go into the STOP mode.

INFRARED REMOTE CONTROL

- Load the two batteries (SIZE IEC standard R6, UM-3 "AA") into remote control unit before operation.



- Turn **VTR Switch** to **ON**.
- **Timer Rec Switch is OFF.**
- Insert a cassette.
- To operate the recorder, point the transmission window at receiving window of the recorder.

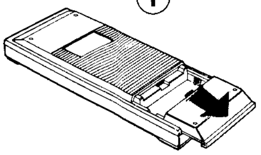
Infrared remote control can be operated the same as the recorder except for the following functions.

RECORDING
Push **Record** and **Record Coupled Buttons** simultaneously.
You need not to push the Play Button.

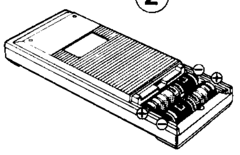
CHANNEL CHANGE
Push the desired channel number directly.

- Channel can also be changed by pushing CHANNEL UP button.
- Channel cannot be changed during recording (except pause).

①



②



Loading the batteries

① Remove the battery compartment lid.

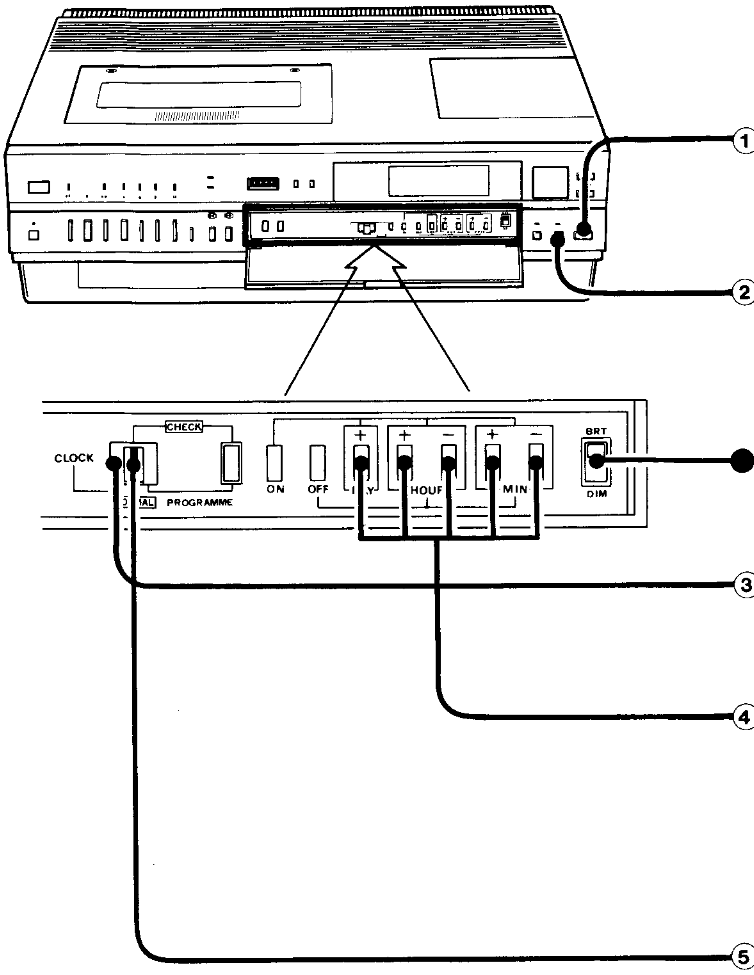
② Place two batteries in the battery compartment.

③ Replace the lid.

CAUTION WITH BATTERY REPLACEMENT

1. Load the new batteries with their polarities (⊕ and ⊖) aligned properly.
2. Do not heat, disassemble or shortcircuit the old batteries.
3. If you do not intend to use the remote controller for a long period of time, remove the batteries and store them.
4. Remove spent batteries immediately and dispose of them.
5. Do not mix old and new batteries.
   (Also never mix alkaline batteries with manganese batteries.)

CLOCK TIME ADJUSTMENT



① Turn the **unit ON.**

② Make sure that **TIMER REC Switch** is **OFF.**

● Dim/Bright Switch
Changes the brightness of the display.

③ Switch **Mode Selector** to **CLOCK.**

④ Set the clock by pushing **DAY, HOUR, MIN Buttons** to be a minute forward from the present time.
For example, if the present time is 10:14 and 20 seconds a.m. on Sunday, first set the clock for "SUN 10:15".
•This clock is based on 24-hour indication.

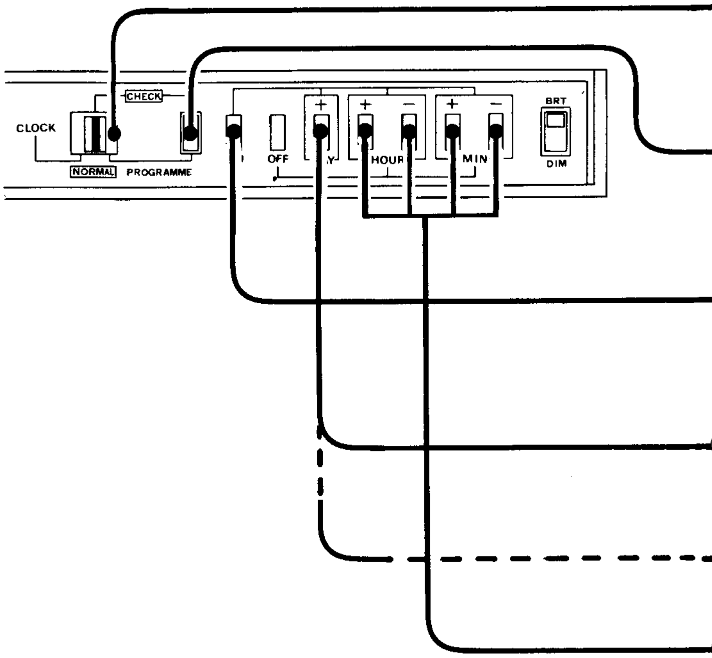
⑤ When the time becomes 10:15 and 0 second a.m. switch **Mode Selector** to **NORMAL.**
The clock will start normal clock operation on 0 second. As long as the unit is plugged in, the clock operates irrespective of power switch position, but when the unit is first plugged in or if there is a power failure for more than 60 minutes the clock indication "SUN 0:00" will flash on and off, when power resumes, indicating it has lost the present time memory.

TIMER RECORDING

The programmable clock timer permits the timer recording of up to 4 programmes in 2 weeks.

To set the recording start/stop time
Make sure that
— the clock indicates the present time correctly,
— VTR Switch is ON,
— **TIMER REC Switch is OFF,**
— **INPUT SELECT to TUNER.**

●To set the Start Time



① Switch **Mode Selector** to **PROGRAMME.**
Numbers 1, 2, 3, and 4 will flash ON and OFF. (If there is a programme which is programmed already, its number stays alight.)

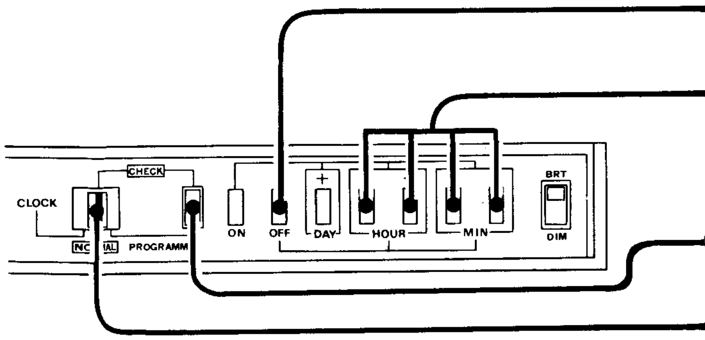
② Push the **PROGRAMME Button.**
Number 1 will stay alight (other numbers will go off). To select programmes 2-4, repress this button. The indication ON will flash on and off.

③ Push the **ON Button.**
The indication "ON" will stay illuminated and the current DAY and TIME will also light up as well as the symbol " I " meaning the 1st week.

④ Select a desired day for recording by pushing **DAY Button.**
If a day in 2nd week is selected, the symbol " II" will light up.
To record a programme at the same time every day
● Press **DAY Button** until the day indications pass 2nd week, and then all day indicators will light up.

⑤ Set the **Starting time** by **HOUR, MIN Buttons.**

●To set the Stop Time



⑥ Push the **OFF Button,** then OFF will light up and ON will go out.

⑦ Set the **stop time** by **HOUR, MIN Buttons.**

⑧ Select the channel to be recorded by pressing **UP** or **DOWN button.**

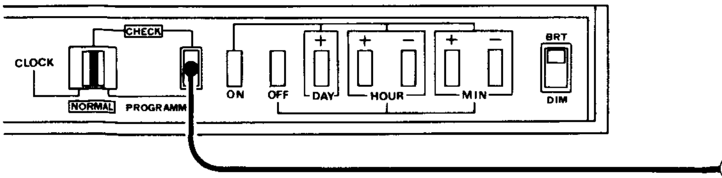
⑨ Push the **PROGRAMME Button** to select the next programme and repeat steps ③—⑧.

⑩ Switch **Mode Selector** to **NORMAL.**
The present time will be displayed.

When above operations have been completed, proceed on page 1-9.

Notes:
- Priority order of programme is 1, 2, 3 and 4.
- When one programme overlaps another, overlapped number will flash. If this occurs, overlapped portion will not be recorded. Reset the programme.

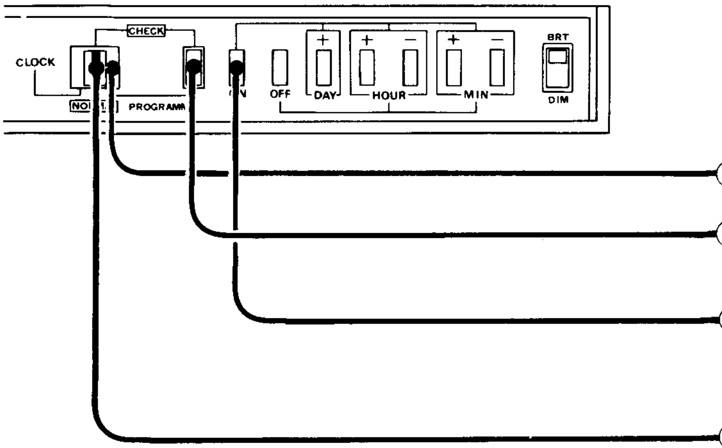
●To check Programming



To check recording start/stop time
Make sure that
— Mode Selector is set to "NORMAL",
— VTR Switch is ON.

① **Select Programme Number to be checked by pressing PROGRAMME Button.** Start/Stop times will be displayed, and then present time will appear.
•The channel indicator displays the programmed channel number during checking.

●To clear Programming



To clear recording start/stop time
Make sure that
— VTR Switch is ON,
— TIMER REC Switch is OFF.

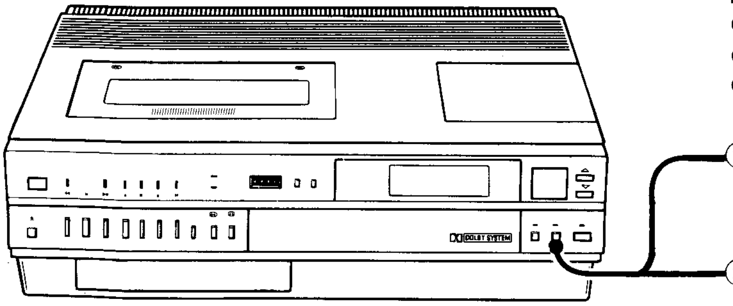
① Switch **Mode Selector** to **PROGRAMME**.

② **Select programme number to be cleared** by pushing **PROGRAMME Button.**

③ Push **ON Button.**
The present time will be displayed (this implies the elimination of programmed memory).

④ Return **Mode Selector** to **NORMAL**.

●Timer Recording



Prepare for timer recording as follows:
- Turn the unit on.
- Insert a cassette.
- Set Input Signal Selector to "TUNER".

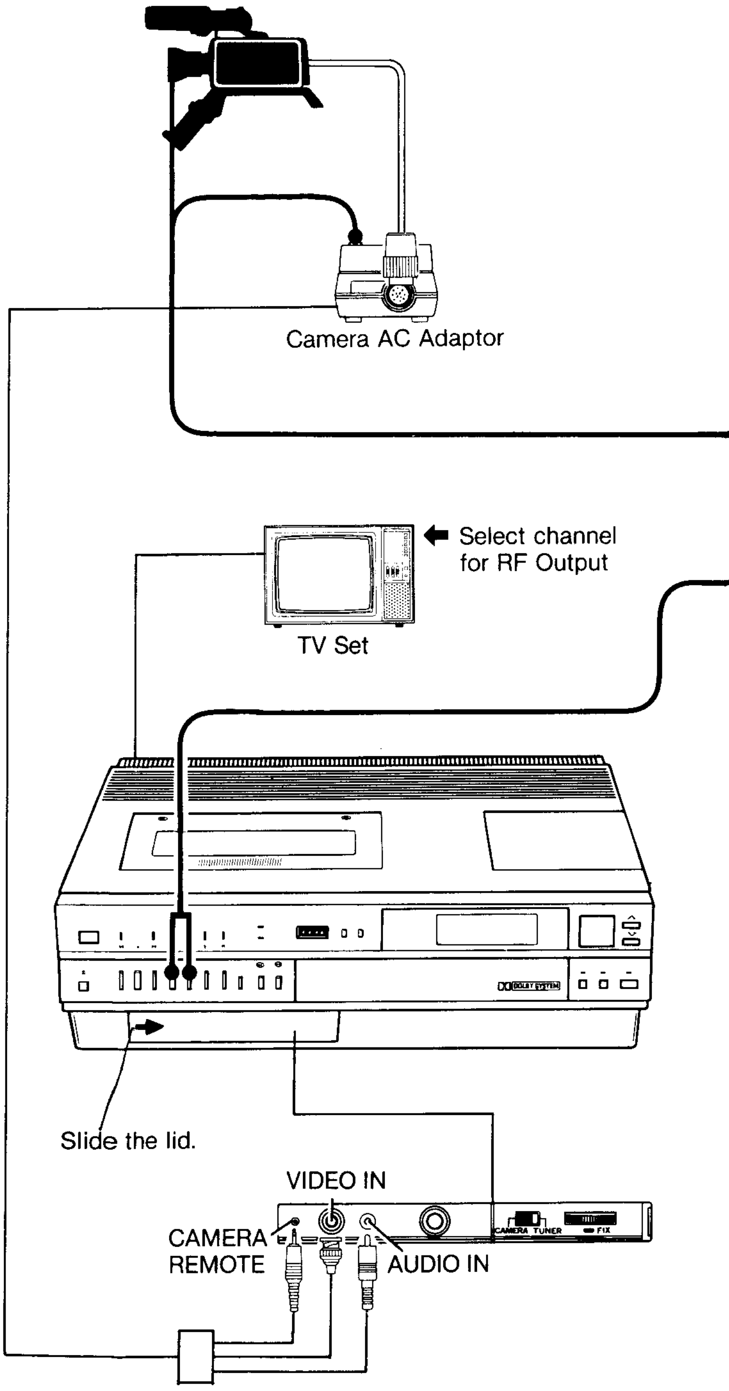
① Set **TIMER REC** Switch **ON.**
•When the tape reaches its end, the unit will stop.
•To stop the timer recording push Timer Rec Switch OFF.

② **When the timer recording is finished**, push **Timer Rec Switch OFF.**
If the Timer Rec Switch is ON, the recorder cannot be operated manually.

Notes:
- Check operation cannot be made during timer recording.
- Channel cannot be changed during recording.
- It is not necessary for TV to be ON for timer recording.
- If the cassette's tab is missing or there is no cassettte tape in the recorder, TIMER REC lamp flashes and no recording will start.
- If there is a power failure for more than about 60 minutes before or during timer recording, the recording will not be performed or continued even if power resumes thereafter.

Note for the timer back up:
It is necessary to connect AC power cord to an AC outlet continuously for more than about 50 hours that the timer back up function is initiated.

CAMERA RECORDING



The unit may be used with an optional video camera. The connection diagram is shown, but for best results, please refer to the operating instructions of the camera you are using.

Prepare for camera recording as follows:

- **Set Input Signal Selector to “CAMERA”.**
- Turn TV on and select the RF output channel.
- Turn the unit on.
- **Timer Rec Switch is OFF.**
- Insert a cassette.

① Turn the **Camera AC Adaptor** on and make necessary adjustments on the camera. Refer to the operating instructions of the camera you are using.

② Push **RECORD Button** together with **PLAY Button**, and the unit will go into the standby mode.

③ Press the camera’s start/stop switch to start recording.

To avoid recording unwanted material:
Depress the start/stop switch of the camera, and the tape will stop temporarily.
To resume recording, depress the camera’s start/stop switch again. (To resume recording from the pause mode that is caused by the unit’s pause button, release the pause button or depress the camera’s start/stop switch twice.)
However, if the pause mode continues for more than 5 minutes, the unit will release pause automatically and stop in order to protect the tape and the video heads.

To obtain proper continuity when taping from the stop mode or when STOP Button has been pushed accidentally:

1. Play back the last part of the already recorded material in order to confirm its end point, and then push PAUSE Button.
2. Push RECORD Button. (The unit is still in the pause mode.)
3. Push PAUSE Button to start recording.

•When a camera is being used, release PAUSE Button or depress the camera’s start/stop switch twice.

④ Push **STOP Button** to stop recording.

Note:

- The antenna connection may remain connected when using a camera.

Panasonic

MATSUSHITA ELECTRIC

Printed in Japan

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Service Manual

Video Cassette Recorder

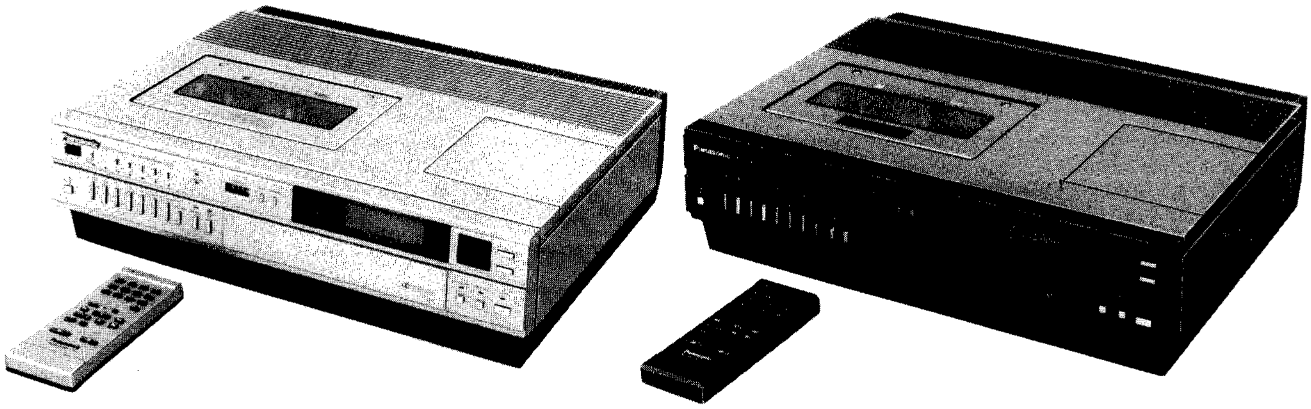
Vol. 2

Panasonic VHS

NV-7200-E -EG -B

Mechanical Adjustment Procedures

Electrical Adjustment Procedures



SPECIFICATIONS

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Power Consumption:	Approx. 52 watts
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Video Recording System:	2 rotary heads, helical scanning system Luminance: FM azimuth recording Colour signal: converted subcarrier phase shift recording
Audio Track:	1 track
Tape Format:	Tape width 12.7mm high density tape
Tape Speed:	23.39mm/s
Record/Playback Time:	180 min. with NV-E180 240 min. with NV-E240
FF/REW Time:	Less than 4.5 min. with NV-E180
Heads	Video: 2 rotary heads Audio/Control: 1 stationary head Erase: 1 full track erase 1 Audio track erase
Input Level:	Video: VIDEO IN connector (BNC) 1.0Vp-p, 75Ω unbalanced Audio: MIC IN jack −70dB, 3.9kΩ (Input impedance) unbalanced (M6) LINE IN jack −20dB, 50kΩ unbalanced (RCA)
Output Level:	Video: VIDEO OUT connector (BNC) 1.0Vp-p, 75Ω unbalanced Audio: LINE OUT jack −6dB, 600Ω (Output impedance) unbalanced (RCA) RF Modulated: UHF channel 36 (±4) 75Ω unbalanced
Weight:	11.5kg
Dimensions:	480(W) × 136(H) × 356(D) mm
Accessories Supplied:	1 pc. Video cassette tape, NV-E120 1 pc. DIN-DIN coaxial cable, VJA0130 1 pc. Dust cover, VFB0008 1 pc. Infrared remote control unit, VSQ0185 (silver) VSQ0186 (black)
Optional Accessories:	Video cassette tape: NV-E240 Approx. 344m, 240 min. NV-E180 Approx. 258m, 180 min. NV-E120 Approx. 174m, 120 min. NV-E60 Approx. 88m, 60 min. Video camera, WV-3030E Microphone

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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MECHANICAL ADJUSTMENT PROCEDURES

DISASSEMBLY OF CABINET PARTS

1. DISASSEMBLY FLOWCHART

This flowchart indicates disassembly steps of the cabinet parts and the PC Boards in order to find the item(s) necessary for servicing.
When reassembling, perform the step(s) in the reverse order.

Notes:
1. When removing the Front Panel, work with care not for breaking the locking portion of the panel.
2. The adjustment is required when the Cassette Guide was replaced.

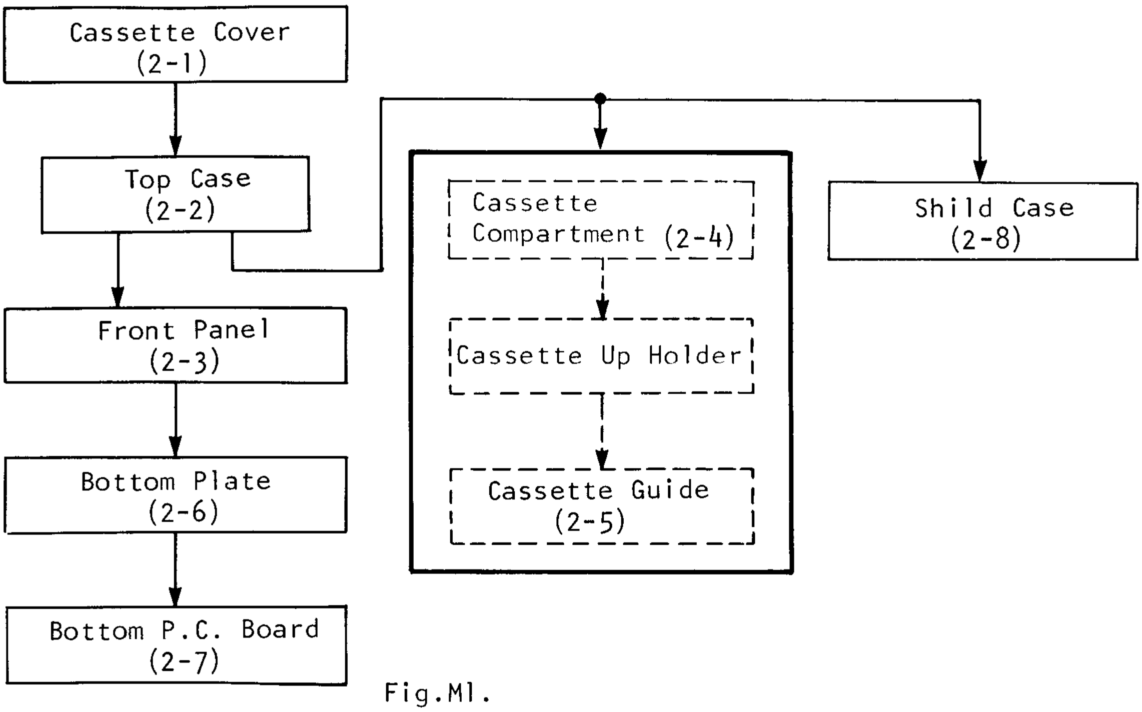

Cassette Cover (2-1)
Top Case (2-2)
Front Panel (2-3)
Bottom Plate (2-6)
Bottom P.C. Board (2-7)
Cassette Compartment (2-4)
Cassette Up Holder
Cassette Guide (2-5)
Shild Case (2-8)

Fig.M1.

2. DETAILED DISASSEMBLY METHOD

2-1. Removal of the Cassette Cover
Remove 2 screws (A). Then lift the cassette cover.

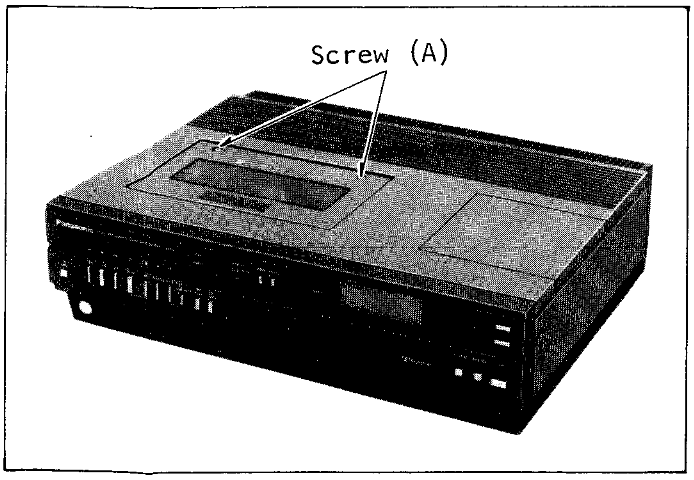


Fig.M2.

2-2. Removal of the Top Case
Remove 2 screws (B). Then carefully lift the rear portion and pull it toward the rear of deck to remove.

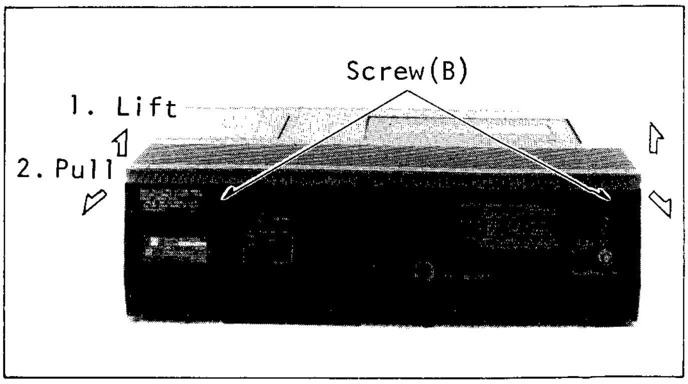

Screw(B)
1. Lift
2. Pull

Fig.M3.

2-3. Removal of the Front Panel

Remove 5 screws (C). Then hold the top portion of the panel and turn it toward the front of the deck to remove.

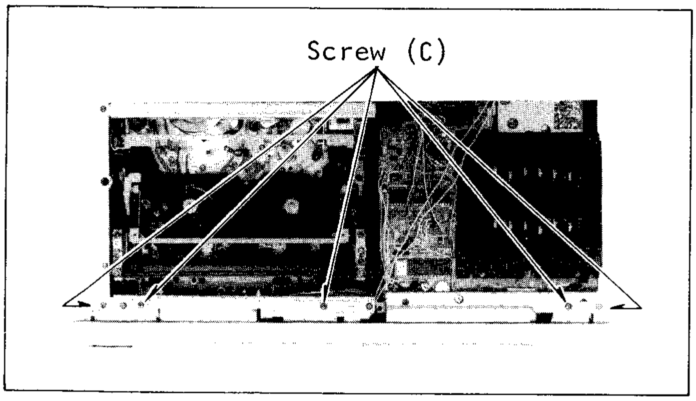


Fig.M4.

2-4. Removal of the Cassette Compartment

Since the adjustment is not required when reinstalling the cassette compartment unless the screw located on center was loosened or removed, remove the entire cassette compartment for servicing or adjustments of parts under it.

Remove 2 screws (D) on each side and remove the Cassette Compartment (Cassette Up Holder and Cassette Guide).

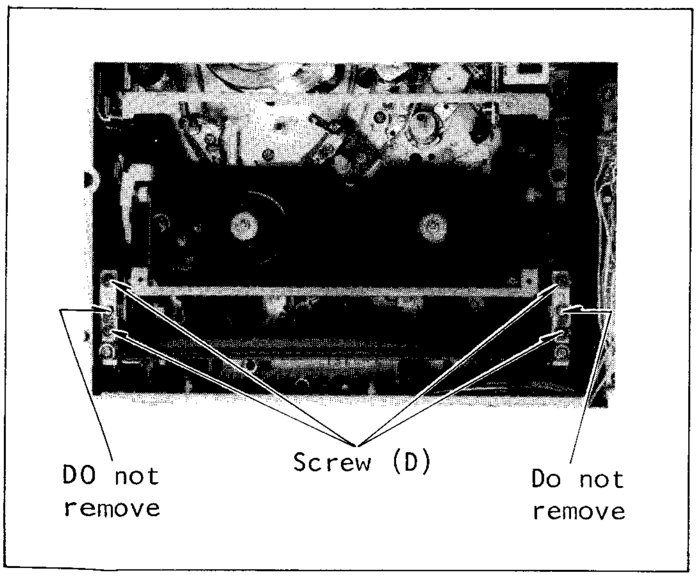


Fig.M5.

Note: Do not remove screws paint locked. (located on center)

2-5. Removal of the Cassette Guide

In case only the cassette guide requires replacement or removal, remove a screw (E) on each side.

Note: Unless the cassette up holder unit is installed, this part should not be installed because the adjustment is required. When reinstalling, insert the cassette tape and ensure the clearance between tape and projections on the cassette guide is more than 1 mm.

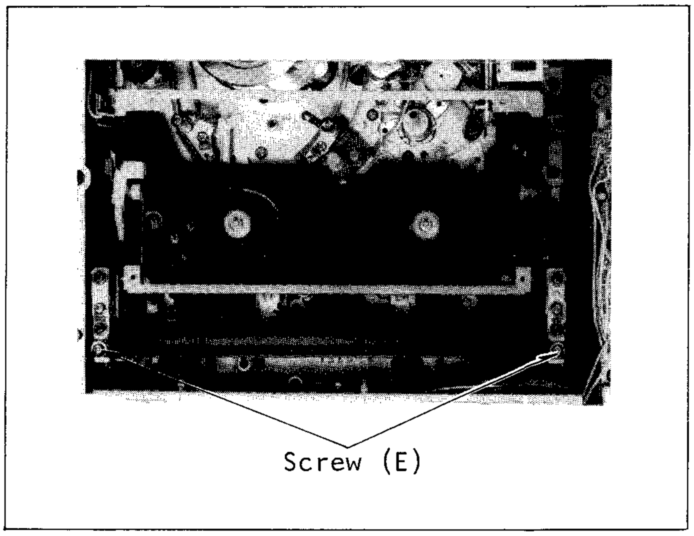


Fig.M6.

2-6. Removal of the Bottom plate

Place the deck up side down so the bottom side faces upward. Then remove the 6 screws (F) to remove.

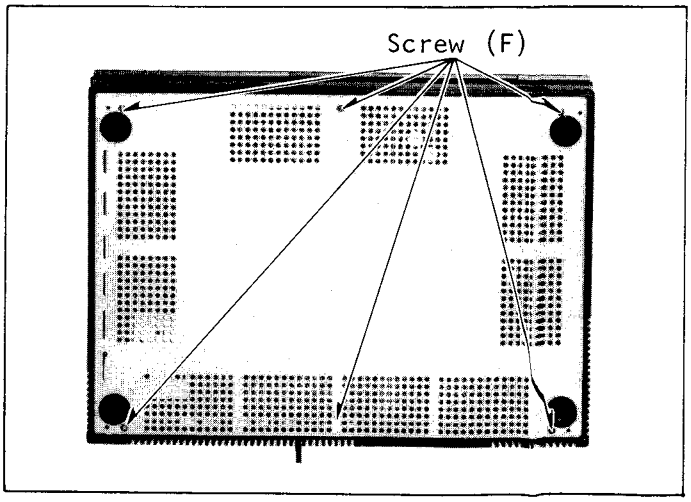


Fig.M7.

Note: Place the cushion under the deck for not being damaged the top portion of the deck.

2-7. Opening of the Bottom PC Board
Remove 8 screws (G). Push the front portion of PC Board in the direction indicated for being free the knobs and jacks located on the front, then lift the PC Board to open it.

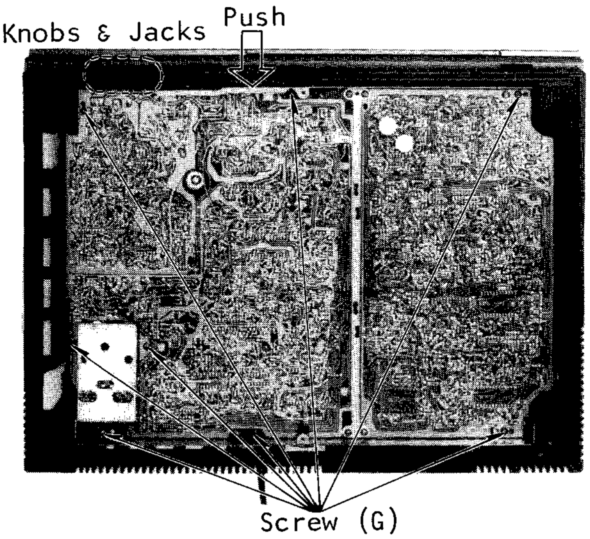

Knobs & Jacks
Push
Screw (G)

Fig.M8.

2-8. Removal of the Shild Case
Remove 2 screws (H). Lift it upto remove.

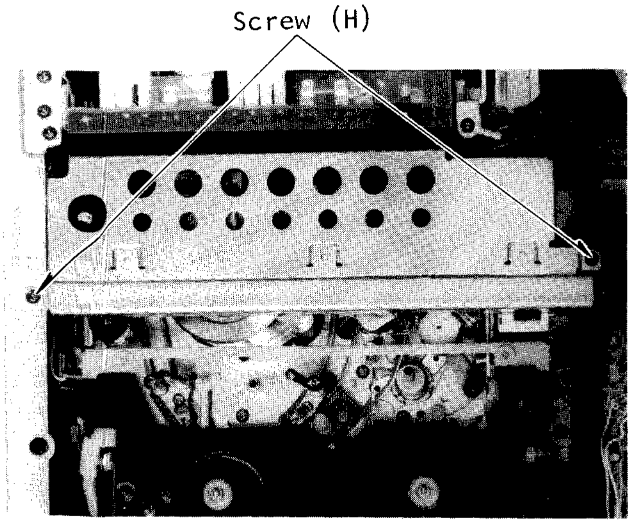


Fig.M9.

ADJUSTMENT PROCEDURES

1. REPLACEMENT OF UPPER CYLINDER UNIT

Work with extreme care when removing or replacing the upper cylinder unit. Do not touch video heads during servicing.

1. Remove the Bottom Case, Cassette Cover, Top Case and the Shield Case. Refer to "DISASSEMBLY METHOD" section.
2. Remove the screw (A) and Discharge Brush Unit. And unsolder the 4 leads which are color coded to match leads on the head relay board.
3. Remove the 2 screws (B) and gently lift the upper cylinder unit from the shaft.
4. Before reinstalling a new one, clean the DD cylinder shaft and surface engaged with it on the upper cylinder with soft cloth dampened with freon liquid.
5. Reinstall the new one so the color code of 4 leads match leads on the head relay board and tighten the 2 screws (B).
6. Resolder the 4 leads to head relay board and reinstall the Discharge Brush Unit.

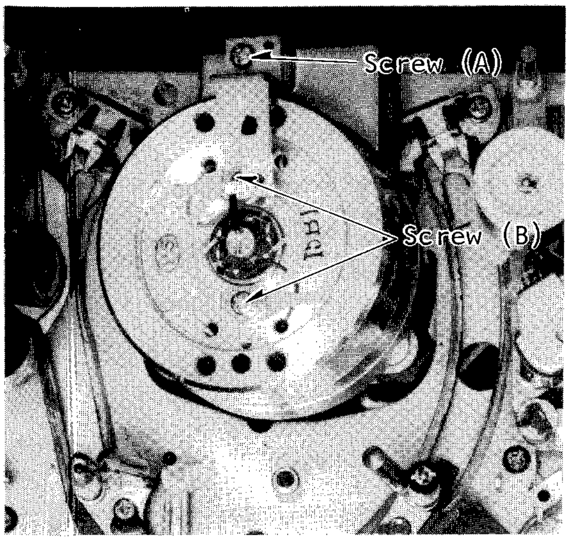


Fig.M10. Removal of Upper Cylinder

Note:
Upon completion of replacement, confirm the performance. And if any further maintenance is required, refer to the "TAPE INTERCHANGEABILITY ADJUSTMENT" section and perform the necessary items.

2. REPLACEMENT OF DD CYLINDER UNIT

Work with extreme care when removing or replacing the DD cylinder unit. Do not touch video heads during servicing.

1. Remove the Bottom Case, Cassette Cover, Top Case, Front Panel and Shield Case. Then open the Bottom P.C. Board. Refer to "DISASSEMBLY METHOD" section.
2. Disconnect 2 connectors (P001 and P002) and remove the DD cylinder unit by removing 3 screws (A). Since there is very little clearance between DD cylinder and chassis, remove the cylinder gently and carefully. The P001 is connected to the Servo & Still P.C. Board and the P002 is connected to the Video, Colour & Audio P.C. Board.

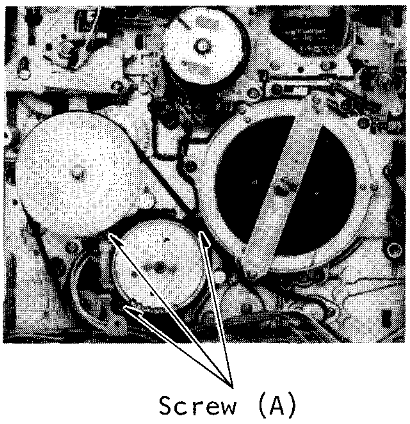


Fig.M11. Removal of DD Cylinder

For P002, first remove the shield case and disconnect the P002.

Note:
Pay particular attention to how these wires are routed along the chassis so that proper lead dress can be restored when the DD cylinder is reinstalled.

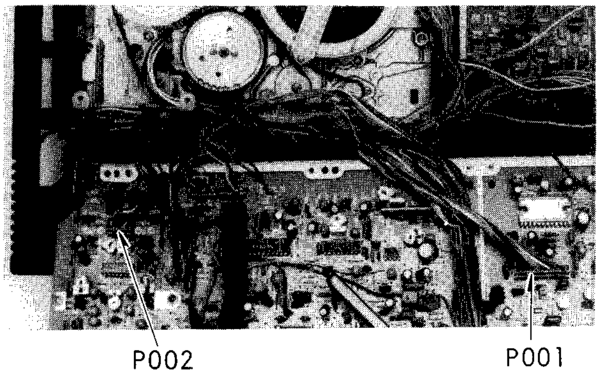


Fig.M12. Location of Connector

3. Remove the upper cylinder unit from the DD cylinder and reinstall it on new one. To perform this step, refer to "REPLACEMENT OF UPPER CYLINDER UNIT" section.
4. Reinstall the new DD cylinder unit to the chassis and restore the leads, connect the P001 and P002, and recover the shield case.

Note:
Upon completion of replacement, confirm the performance. And if any further maintenance is required, refer to the "TAPE INTERCHANGEABILITY ADJUSTMENT" section and perform the necessary items.

3. ADJUSTMENT OF SAFETY SWITCH

* Specification
When the cassette tape with tab is used, switch turns on and without tab switch is kept off.

* Equipment required:
Cassette Holder Fixture (VFK0188)
Fine Adjustment Screwdriver (VFK0136)

1. Remove the Cassette Compartment.
2. Place the fixture and slightly loosen the screw (A).
3. Insert the adjustment screwdriver into the hole (B). Turn screwdriver in either direction till the switch turns on and tighten the screw (A).

   By turning screwdriver clockwise switch turns on, counterclockwise switch turns off.

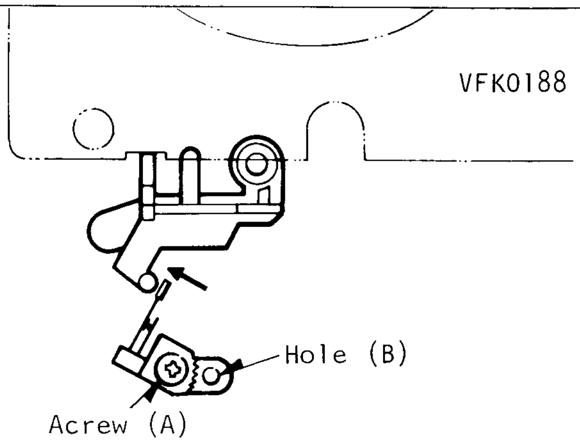


Fig.M13.

4. Upon completion of adjustment, confirm that the switch turns on by using tape with tab and off without tab.

Note: The alignment tape can be used for confirmation by covering the broken tab. After confirmation by covering the broken tab. After confirmation, ensure the cover is removed.

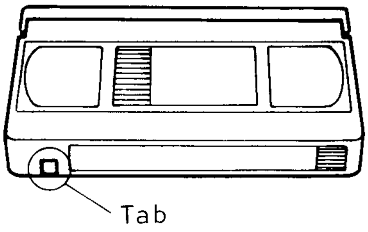


Fig.M14.

4. POSITION ADJUSTMENT OF TENSION POST

* Equipment Required:
Tension Post Adjustment Plate .... (VFK0187)
Fine Adjustment Screwdriver .... (VFK0136)

1. Remove the top case and cassette compartment.
2. Blind the supply photo transistor with opaque paper and press the cassette lock lever down to simulate the condition cassette tape is lowered.

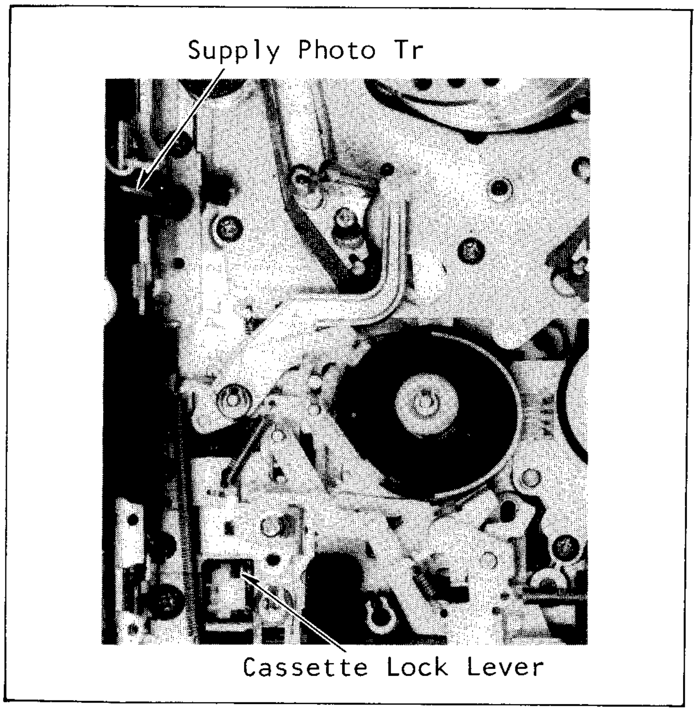


Fig.M15.

3. Turn power switch on and push the play button for loading. As soon as the loading is completed, take out the AC plug.
4. Place the adjustment plate and slightly loosen a screw securing the tention band braket.
5. Insert the fine adjustment screwdriver into the hole and move the tension band bracket in either of direction so the tension post just touches the fixture.

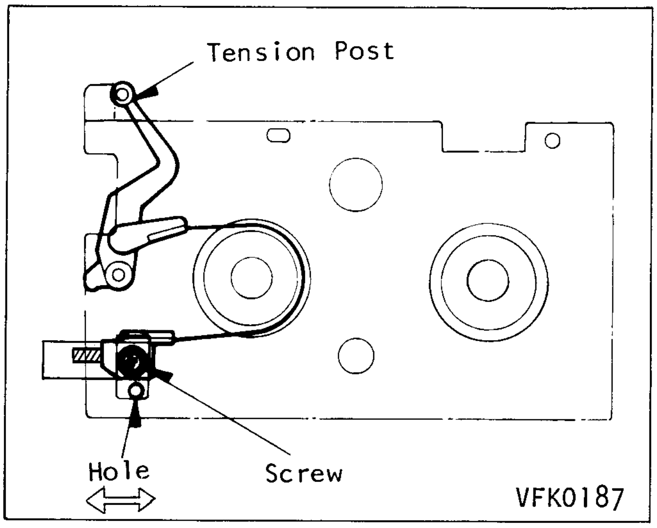


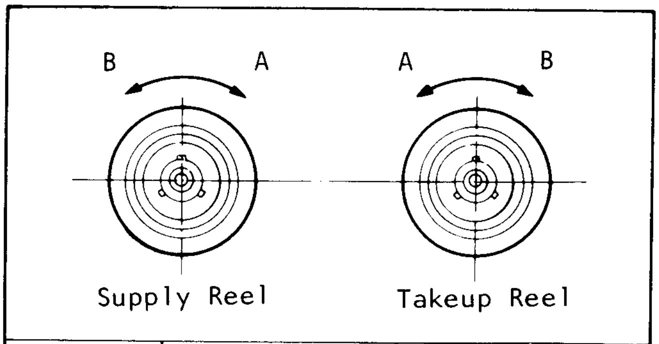
Fig.M16.

6. Upon completion of adjustment, ensure the cassette lock lever is unlatched before reinstalling the cassette compartment.

5. CONFIRMATION/ADJUSTMENT OF BRAKE TORQUE

A. Confirmation Procedure
Equipment Required:
Torque Gauge ... (VFK0133)
Adaptor for Gauge .. (VFK0134)

Spec.



	A	B
Takeup	450 ∿ 850 g-cm	70 ∿ 150 g-cm
Supply		

Fig.M17.

1. Remove the top case and the cassette compartment.
2. Attach the adaptor to the torque gauge and place the deck in STOP mode.

3. Place the torque gauge on the reel table.
   The weight of gauge should be free against the reel table.

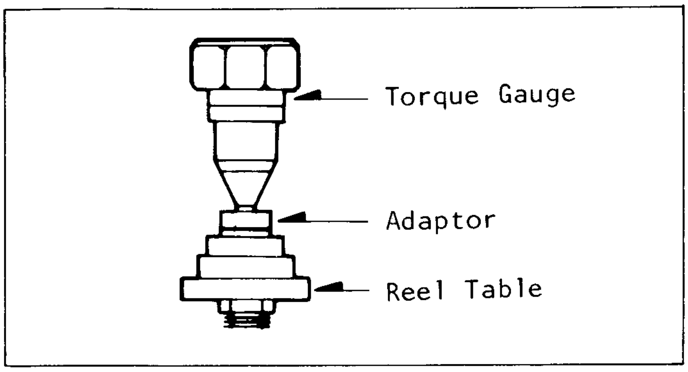


Fig.M18.

4. Turn torque gauge in the direction indicated in the Fig. M17 until the brake begins slipping.

B. Adjustment Procedure
   To adjust the brake torque, change the notch.

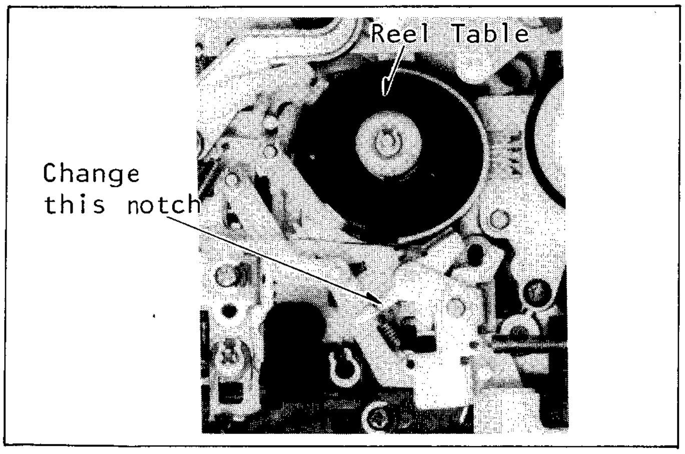


Fig.M19.

Note: If proper brake torque could not obtained by changing the spring position, clean the rotating surface of the reel table with soft cloth and confirm torque before replace it.

6. CONFIRMATION OF TAKEUP TORQUE

☆ Equipment Required:
Dial Torque Gauge ... (VFK0133)
Adaptor for Gauge ... (VFK0134)

☆ Specification
in PLAY mode ... 120 ∿ 190 g-cm
in F.F. .... more than 400 g-cm
in REW .... more than 400 g-cm

1. Remove the top case and cassette cover.
2. Attach the adaptor to the torque gauge and blind the takeup and supply photo transistors (Q1504 and Q1503) with opaque paper. Lower the cassette up unit and turn power switch on.
3. Set a torque gauge to the Take-up Reel Table, push the play button and read torque on gauge. Also perform for F.F. mode by pushing the F.F. button.

Note: While measuring, the weight of gauge should not rest on reel table.

4. Set the torque gauge to the Supply Reel Table, press the rewind button for rewind mode.
5. Remove the opaque paper.

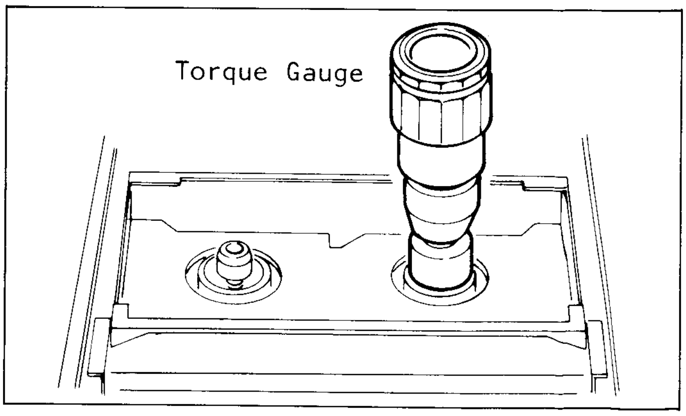


Fig.M20.

Note: There are no-adjustment here. If the torque readings are off considerably, rollers or idlers or reel tables may need replacement.

7. MEASUREMENT AND ADJUSTMENT OF BACK TENSION

A. Measurement Procedure

* Equipment Required:
Back Tension Meter (Tentelometer)
VHS Cassette Tape (120 minutes tape)

* Specification: 25 ∿ 30 g

1. Pull the erase head in the direction indicated by the arrow and hold it by adhesive tape.
2. Play back the cassette tape from its beginning and wait until tape running has stabilized. (for approx. 10 to 20 seconds)
3. Insert tension meter in tape path and confirm reading.

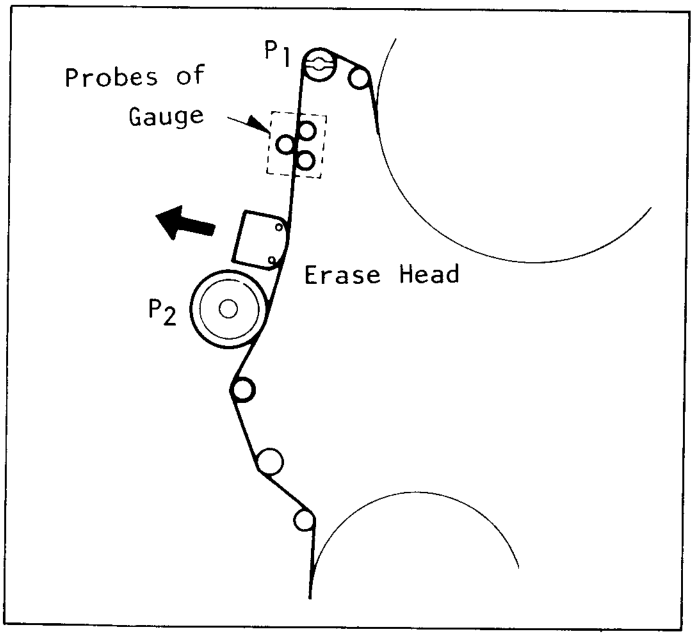


Fig.M21.

Notes : 1. Make sure that the three probes of the meter are all in good contact with tape, but out of contact with supply inertia roller while measuring.

2. It is recommended to be measured three times as tension meter is very sensitive.

B. Adjustment Procedure

* Equipment Required:
Fine Adjustment Screwdriver .... (VFK0136)

1. Loosen a screw (A) and insert the fine adjustment screwdriver into the hole (B).
2. Move the adjustment plate in either of direction indicated by the arrow to obtain the specified tension. Turn the driver clockwise to raise tension, counter-clockwise to lower it.
3. Tighten the screw (A) and varify tension with the meter once again.

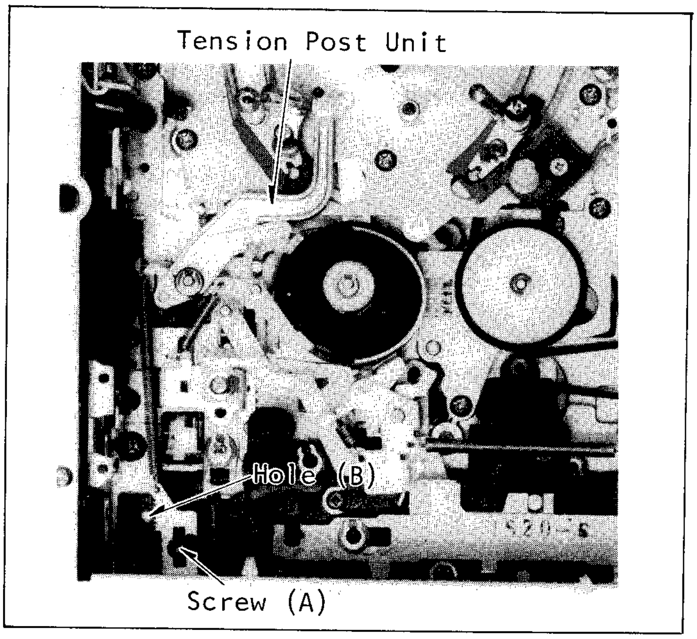


Fig.M22.

Note: Upon completion of adjustment, remove the adhesive tape.

8. HEIGHT ADJUSTMENT OF REEL TABLES

* Equipment Required:
Post Adjustment Plate .. (VFK0191)
Reel Table Height Fixture .... (VFK0190)

* Specification .... 0 ∿ 0.2mm

1. Remove the Cassette Compartment.
2. Place the post adjustment plate, put the dial gauge on it and set the dial gauge to zero "0" with the condition that scraper of gauge touches the cut-out portion of the plate.

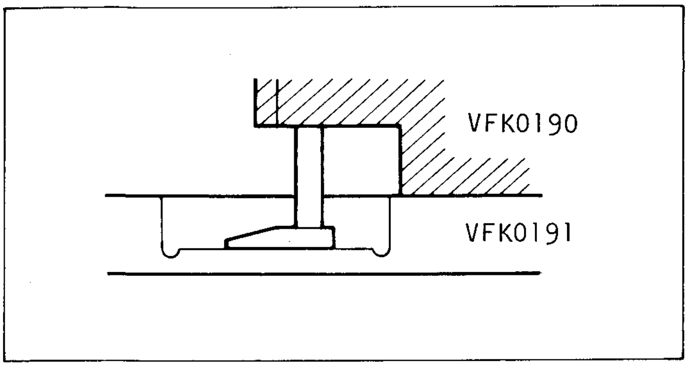


Fig.M23.

3. Then measure the top portion of reel table and confirm the difference against the condition just performed in former step. Do same for the other reel table.

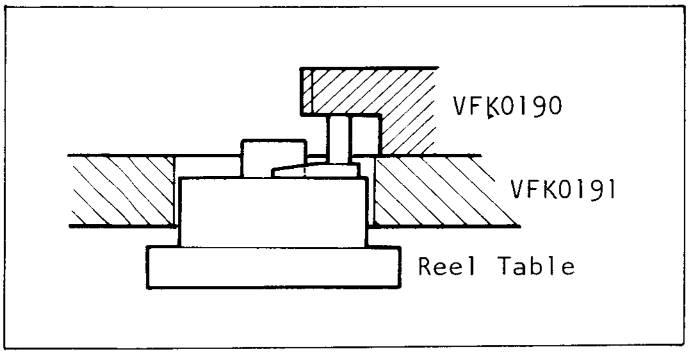


Fig.M24.

4. If the difference is more than 0.1 mm (higher or lower), adjust the height of reel table to obtain the specified height.
5. For adjustment, change the polyslider washer located under the reel table. (The washer is available in size of thickness, t = 0.13 mm, 0.25 mm and 0.5 mm).

9. HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS

* Equipment Required:

Hex. Wrench, (0.9mm) ...	(VFK0146)
Post Adjustment Plate ..	(VFK0191)
Reel Table Height Fixture	(VFK0190)
Nut Driver	(Purchase locally)
Post Adjustment Screwdriver	(VFK0137)

1. Remove the cassette compartment and place the adjustment plate.

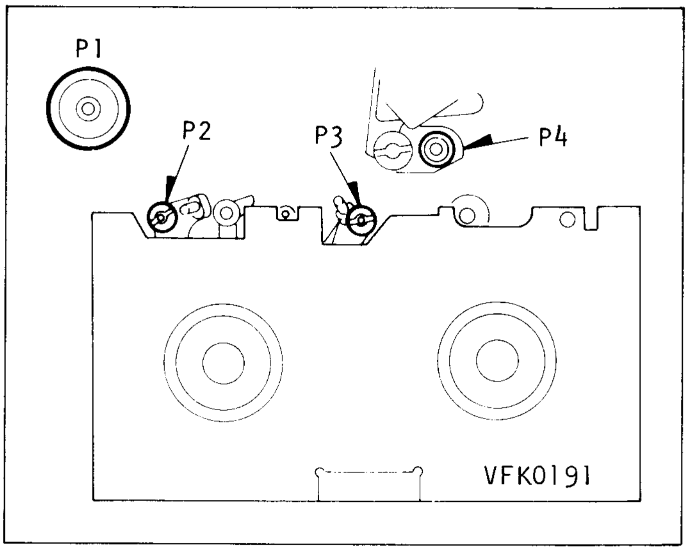


Fig.M25.

2. First lower all posts so the condition of height becomes as shown. (Lower end of post, tape guide, should be lower than scraper.) Loosen a hex. screw located lower portion of posts (P2 & P3), then turn them.

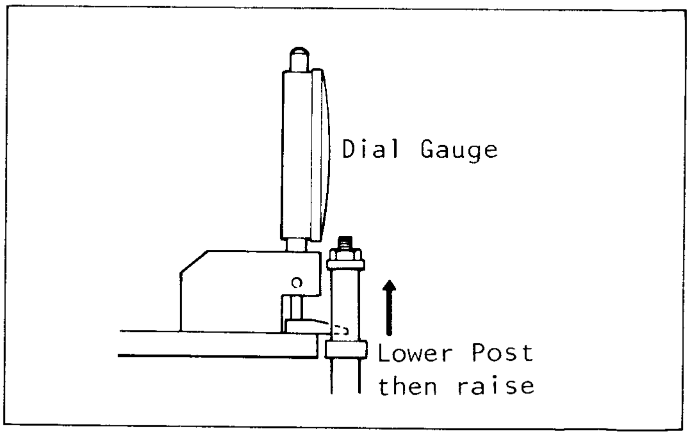


Fig.M26.

3. Place the dial gauge on the adjustment plate and fit the scraper to the post. The condition to fit the scraper should be as shonw. (The scraper of gauge should be fully lowered till it touches the plate).

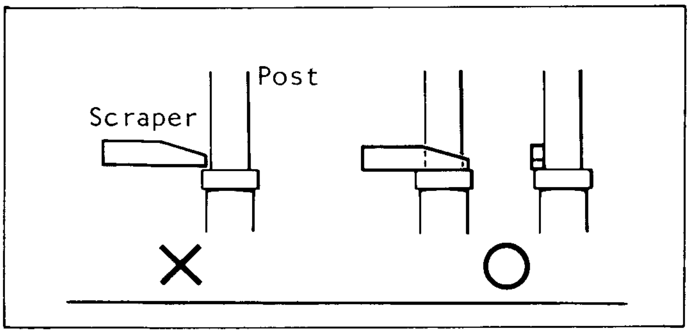


Fig.M27.

4. Set the dial gauge to zero "0", and slowly raise the post until just the post is raised to touch the scraper.
   To adjust P1 and P4, use the nut driver.
   (The post cap on P4 can be removed by turning counter clockwise.)
   To adjust P2 and P3, use the post adjustment screwdriver.

Note: Upon completion of adjustment, tighten hex. screws on the P2 and P3 also install the post cap on Post 4.

10. CONFIRMATION OF ENVELOPE OUTPUT

* Equipment Required
Alignment Tape ..... (VFM8100H3D)
Post Adjustment
Screwdriver .... (VFK0137)

1. Set the tracking control into the detent (fixed) position.
   And connect the oscilloscope to the TP3013.

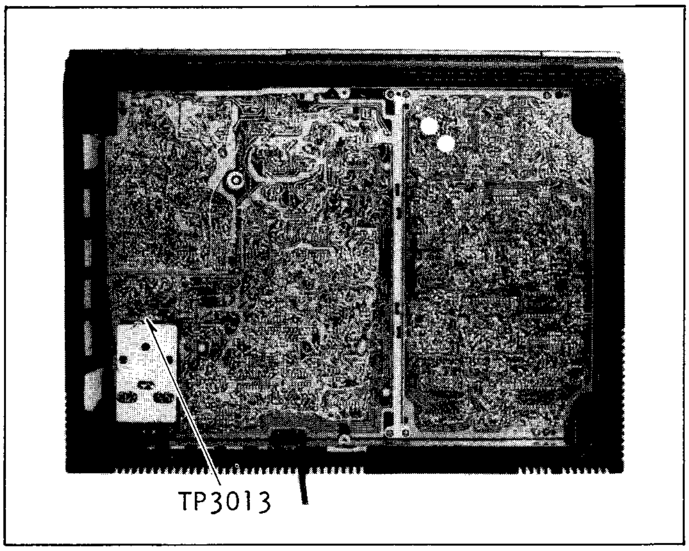


Fig.M28.

2. Play back the monoscope portion of the alignment tape VFM8100H3D, adjust posts P2 and P3 by watching the scope display (Envelope of TP3013 on Main PC Board) so the RF envelope on the scope becomes as flat as possible.
   (V1/V-max $\geqq$ 0.7, V2/V-max $\geqq$ 0.8)

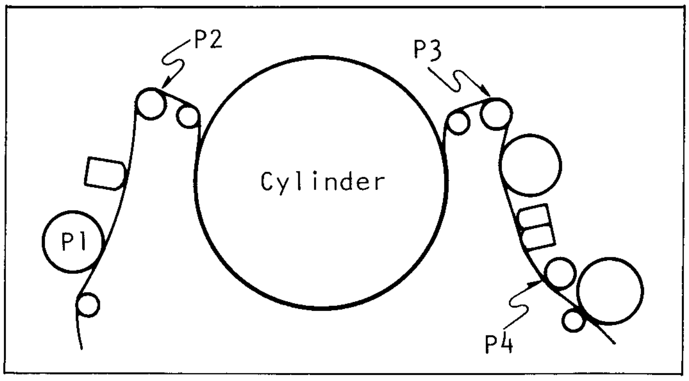


Fig.M29.

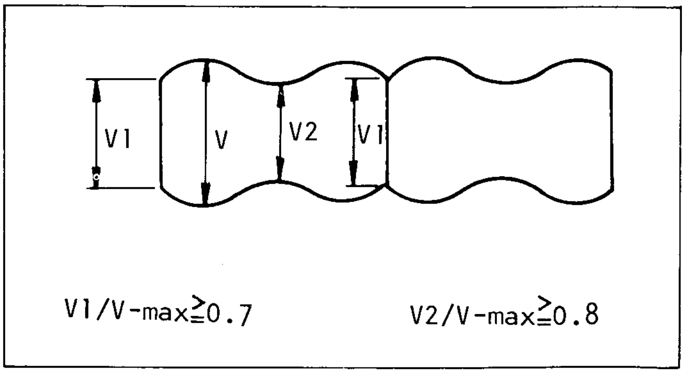


Fig.M30.

3. When the scope display is as follows, adjust the height of P2 shown below.

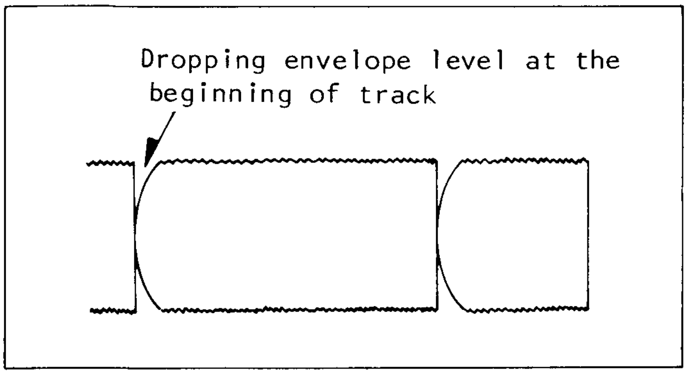

Dropping envelope level at the beginning of track

Fig.M31-(a).

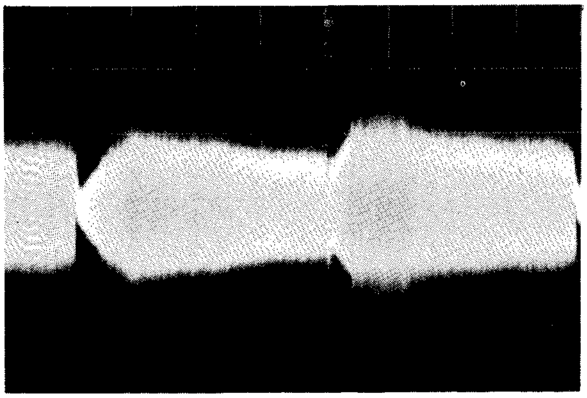


Fig.M31-(b).

4. When the scope display is as follows, adjust the height of P3 shown below.

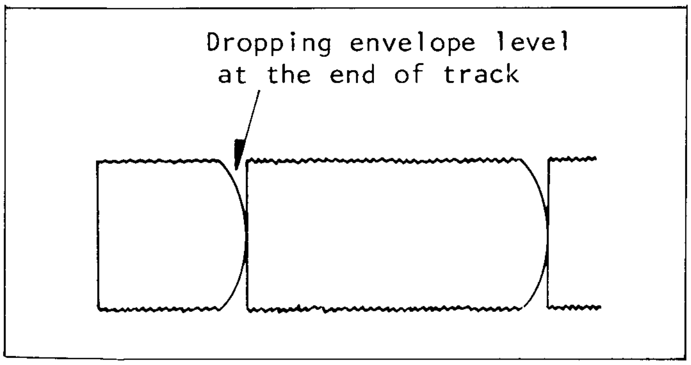

Dropping envelope level at the end of track

Fig.M32-(a).

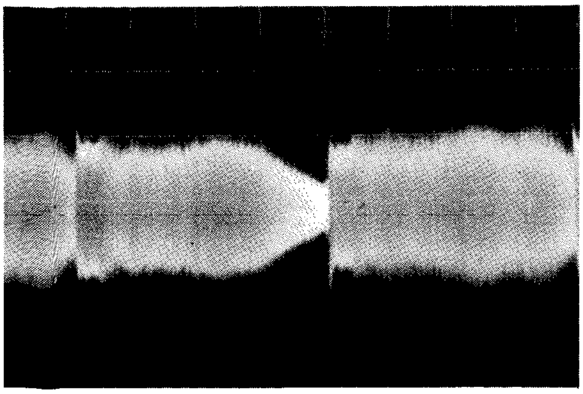


Fig.M32-(b)

5. The scope display with P2 and P3 adjusted correctly should become as shown below.

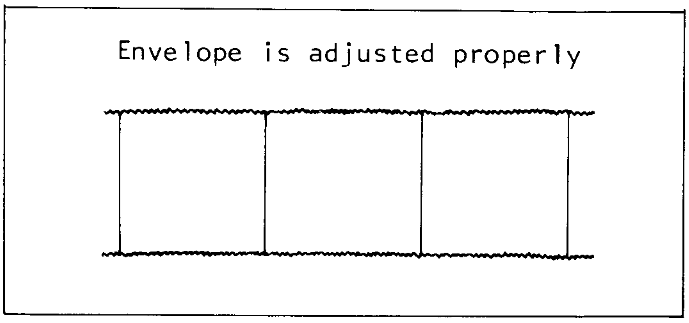

Envelope is adjusted properly

Fig.M33-(a).

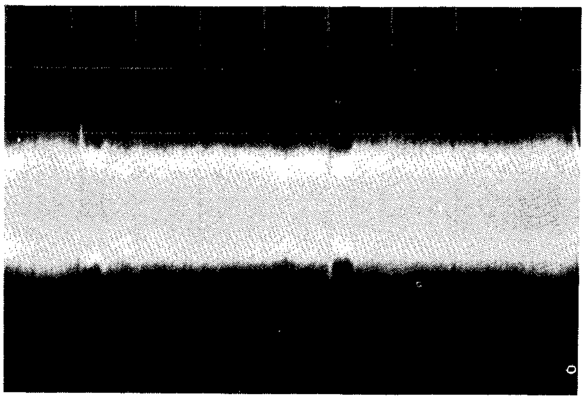


Fig.M33-(b).

6. When the adjustment is required, turn the top of post with the post adjustment screwdriver.

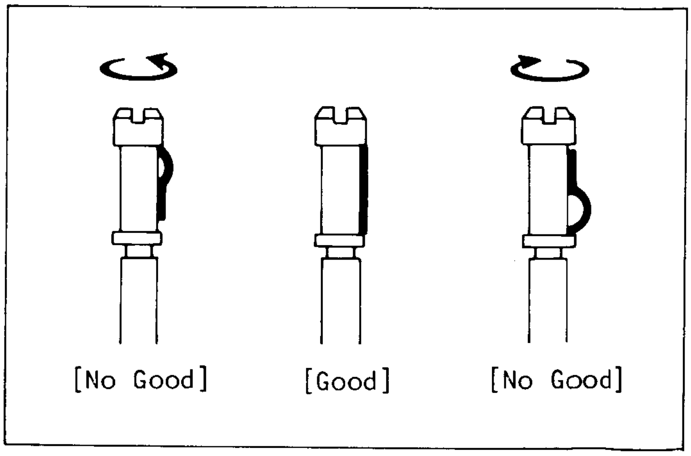

[No Good]
[Good]
[No Good]

Fig.M34.

11. ADJUSTMENT AND CONFIRMATION OF A/C HEAD

11-1. Horizontal Position Adjustment

* Equipment Required:
H-Position Adjustment Screwdriver (VFK0189)

1. Set the tracking control into the detent (fixed) position. And connect the oscilloscope to the TP3013.
2. Playback the monoscope portion of the alignment tape VFM8100H3D and confirm the envelope figure.
3. If the adjustment is required, set the H-position adjustment screwdriver into the slot of the adjustment nut and rotate in either of direction to obtain maximum envelope output.

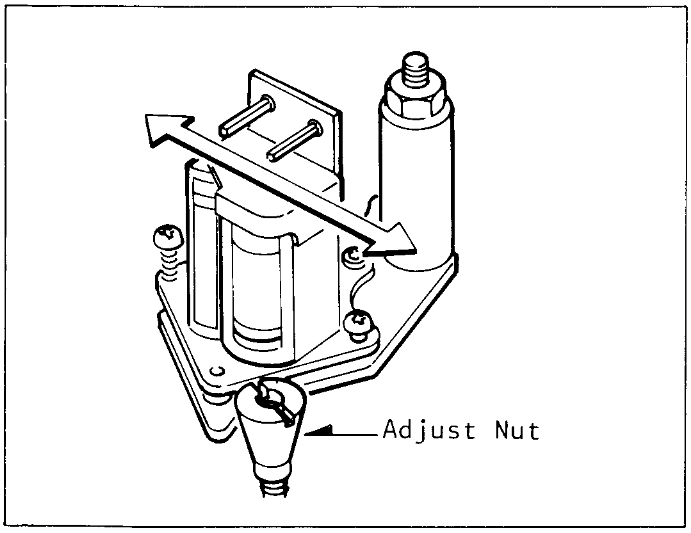


Fig.M35.

A. Confirmation - (1)

Note: Unless the A/C Head is replaced, this procedure should not be done.
Looking at the lower edge of the control head with the tape running, ensure the lower edge of tape runs along the lower edge of the control head.
If it doesn't, just slightly turn the nut (A) in either directions to correct it. Turn clockwise to lower the head and counter-clockwise to raise it.

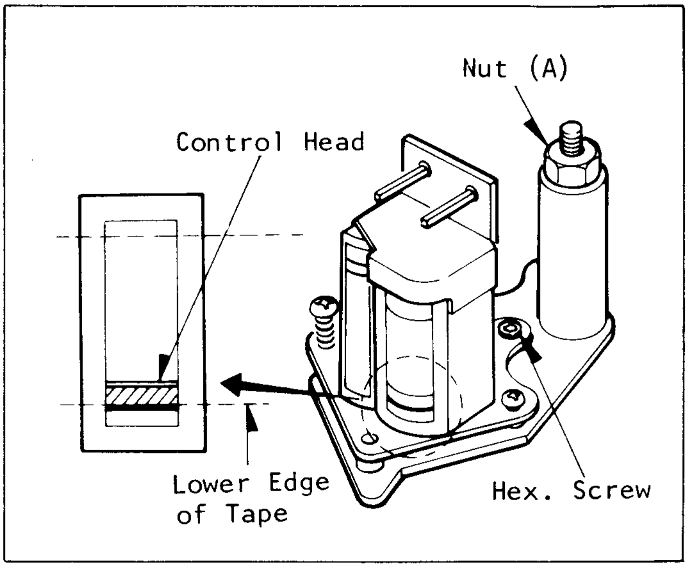


Fig.M36.

B. Confirmation - (2)

Note: Unless the Post-4 is pre-adjusted, this procedure should not be done. (Refer to the section of "HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS").

* Equipment Required:
Hex. Wrench, (1.5 mm) .. (VFK76)
Playback the tape and confirm the tape runs between lower and top limiters of the post. If the lower edge or top edge of the tape turns with waving or frilling, then correct the tilt of the A/C head by turning a hex. screw. (A hex. screw indicated in Fig. M36).

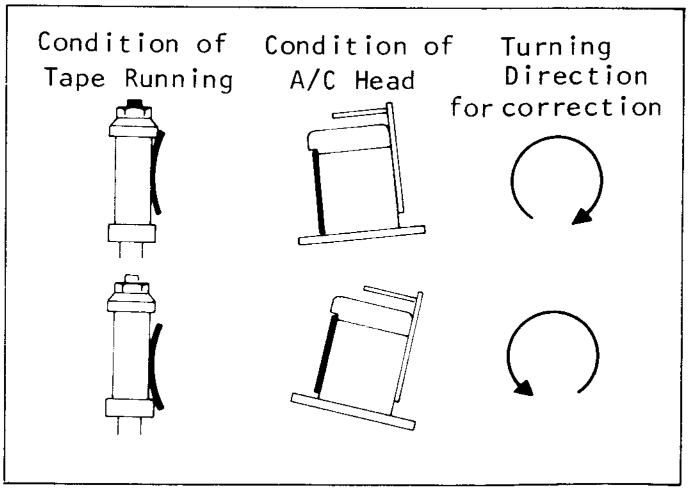


Fig.M37.

12-2. Height Adjustment - (2)

* Equipment Required:
VHS Alignment Tape .. VFM8100H3D
Hex. Wrench (1.5mm) . VFK76

1. Connect the oscilloscope to the audio output on the rear of the deck.
2. Playback the monoscope portion (1 kHz, Audio) of the alignment tape, VFM8100H3D.
3. Adjust the hex. screw and a screw without spring on the head base so the output level becomes maximum.

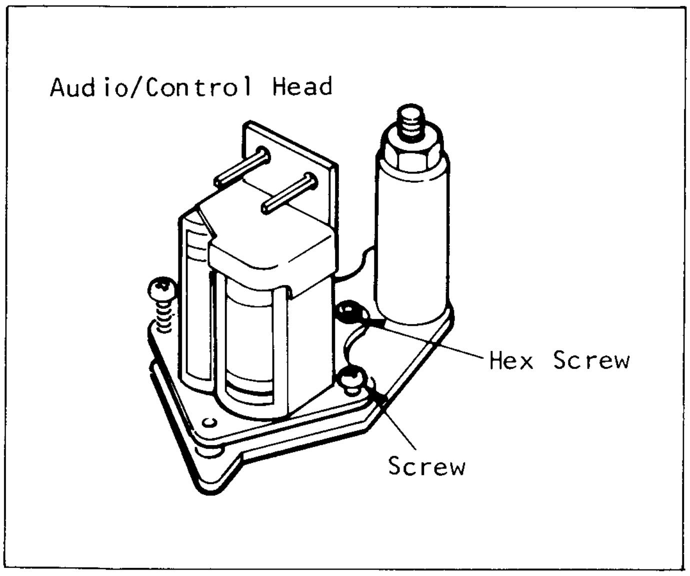

Audio/Control Head
Hex Screw
Screw

Fig.M38.

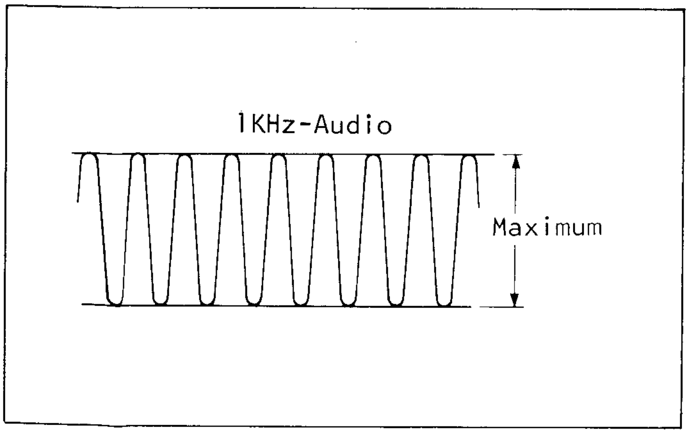

1KHz-Audio
Maximum

Fig.M39.

12-3. Tilt Adjustment

1. Connect the oscilloscope to Test Point TP3013 on the Video Process PC Board.
2. Playback the monoscope portion of the alignment tape, VFM8100H3D and adjust the hex. screw so the RF envelope output level becomes maximum.

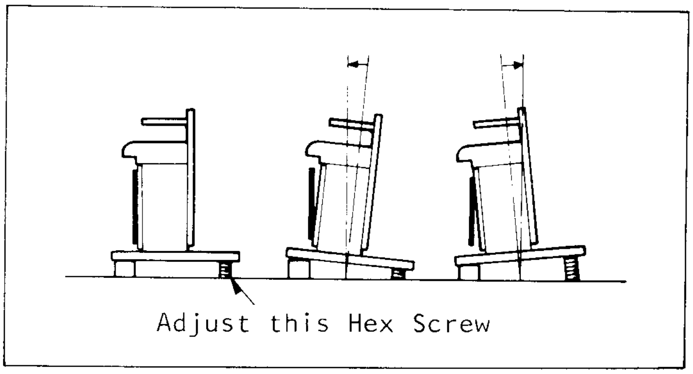

Adjust this Hex Screw

Fig.M40.

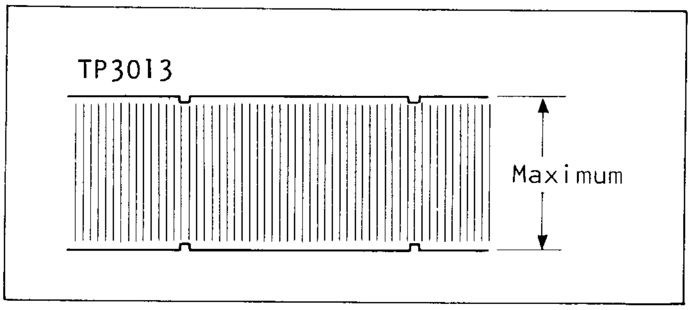

TP3013
Maximum

Fig.M41.

12. ADJUSTMENT OF CASSETTE HOLDER

This adjustment is required only when the screw (A) was removed accidentally.

* Equipment Required:
Cassette Holder Fixture .. VFK0188

Note: Before adjustment, ensure the cassette lock lever is unlatched.

1. Remove the Cassette Guide and slightly loosen 6 screws (A) and (B). Keep the cassette holder ejected condition.
2. Insert the fixture and push all the way in till it touches the tabs on the cassette holder. Hold the fixture and cassette holder together with your hand, then slowly lower them with watching all holes and cut-outs till the cassette holder latches.

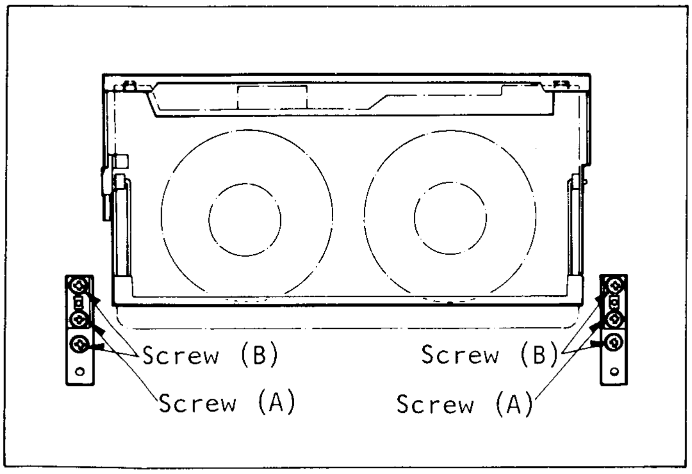


Fig.M42.

3. Press the center portion of the fixture down not for missing adjusted position then tighten 6 screws.
4. Supply power and ensure the smooth movement by repeating pressing down and ejecting of the cassette holder.

13. ADJUSTMENT OF CAM GEAR AND MODE SELECT SWITCH

General Condition:

The mechanism of this model is mostly engaged to the electrical circuit, System Control Circuit, through the mode select switch. Therefore the relation between the mode switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.
If the adjustment of this item is performed inproperly, the deck will be unloaded or compulsorily stopped. And it will result being damaged at any mechanical or electrical parts.

Adjustment Procedures:

1. Turn Loading gear clockwise until the post 2 and 3 were fully unloaded. The small projection on the loading gear will be top portion at the unloading condition.

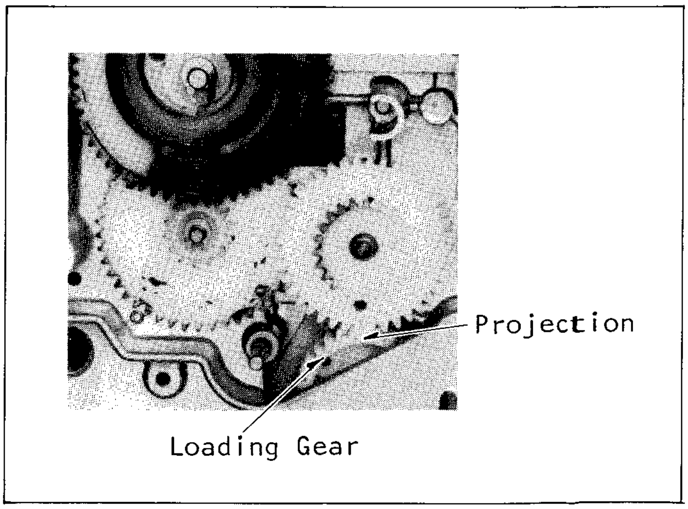


Fig.M43.

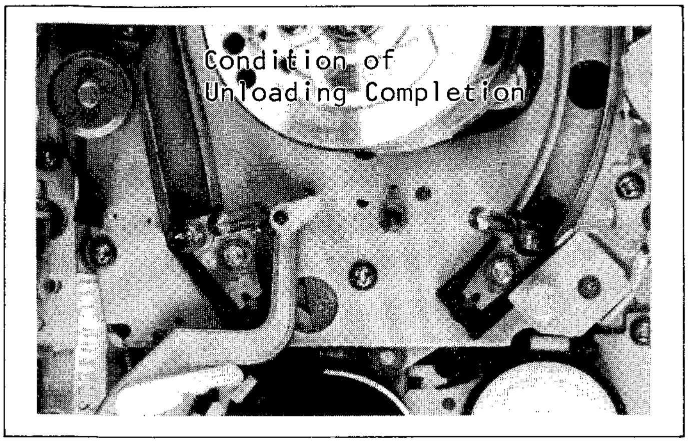

Condition of
Unloading Completion

Fig.M44.

2. Install the action gear so the hole on the action gear meets the projection on the loading gear. Ensure that the loading gear is still fully unloaded condition.

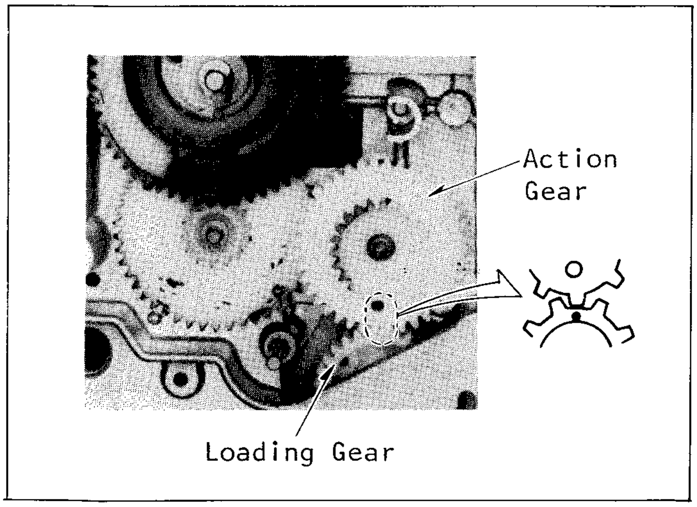

Action Gear
Loading Gear

Fig.M45.

3. Slowly slide the main rod so the V-shaped mark meet the V-shaped mark of the mode select switch. This results main rod and mode select switch stop (unloading completion) mode.
4. Insert the cam gear so the hole (A) on the gear meets the hole on the main rod. To meet the two holes easier, use the small hex. wrench (VFK75) or metal pin. Also ensure the two V-shaped marks are fixed.

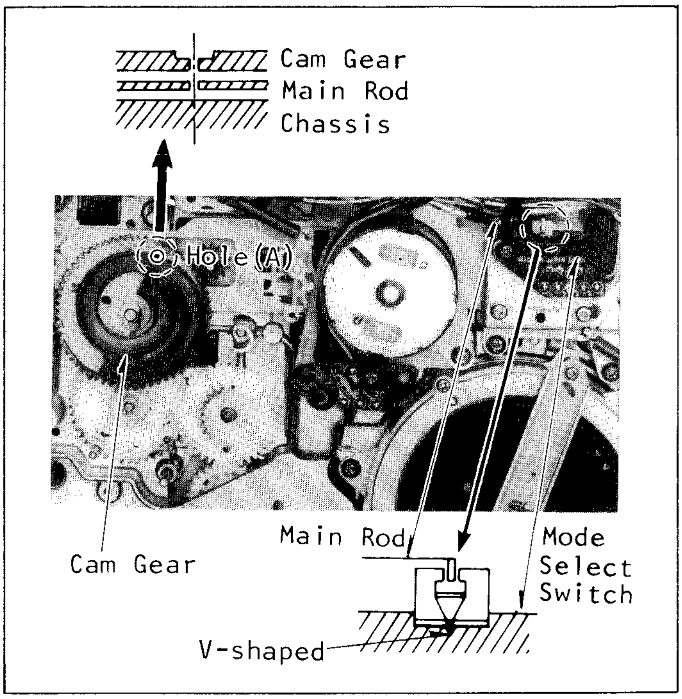

Cam Gear
Main Rod
Chassis
Hole (A)
Cam Gear
Main Rod
Mode Select Switch
V-shaped

Fig.M46.

5. Install the sector gear so the pin on the sector gear meets the inner slot of the cam gear (simple slot side). And install 2 retaining rings to mount cam gear and sector gear.

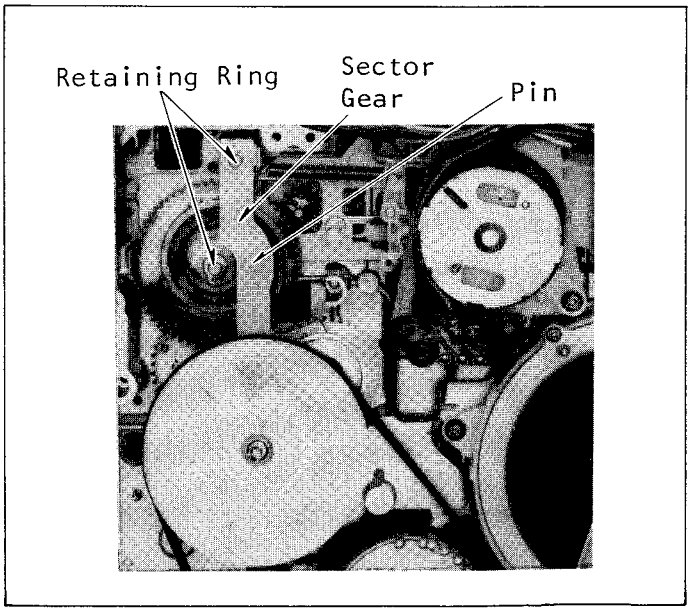

Retaining Ring
Sector Gear
Pin

Fig.M47

6. Final figure should become as illustrated below, and at the same time two V-shaped marks are fixed at the mode select switch.

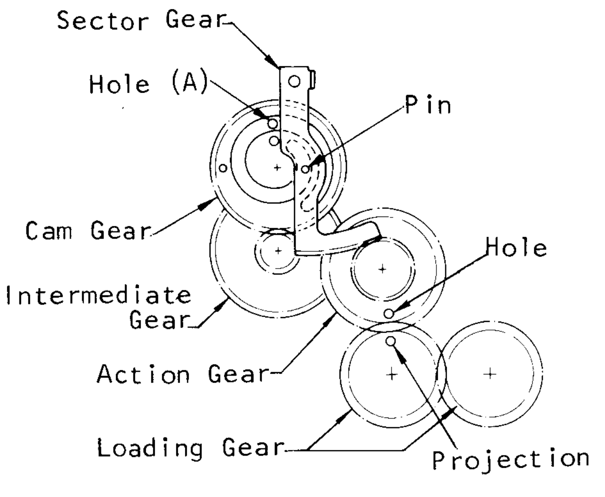

Sector Gear
Hole (A)
Pin
Cam Gear
Hole
Intermediate Gear
Action Gear
Loading Gear
Projection

Fig.M48.

7. Install the gear protector and tighten the nut for mounting it. And install the large gear so the teeth of it contact the outer teeth of the intermediate gear. Then install a retaining ring to mount it.

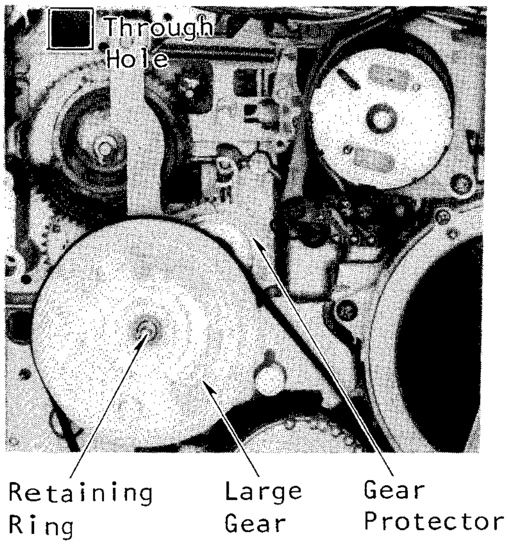

Through Hole
Retaining Ring
Large Gear
Gear Protector

Fig.M49.

8. Set the cassette lock lever unit closed and install it from the through hole on the chassis shown above.

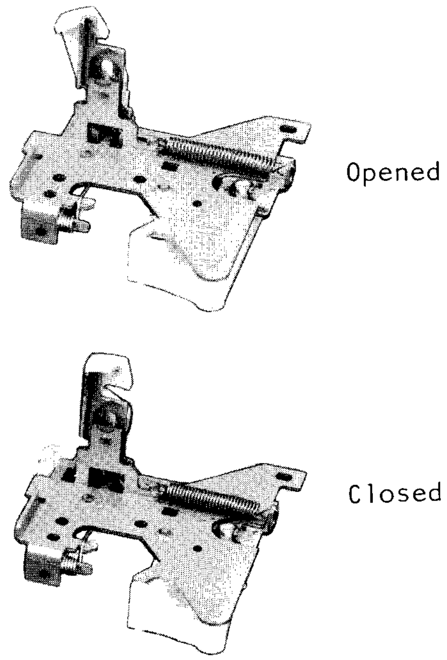

Opened
Closed

Fig.M50.

9. Tighten 2 screws (B), install the belt and belt cover and tighten a screw (C). Turn the large pulley in both direction to confirm the smooth movement of this mechanism.

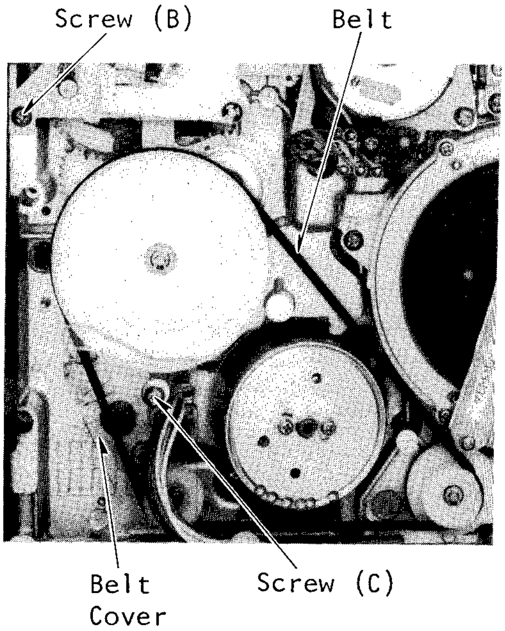
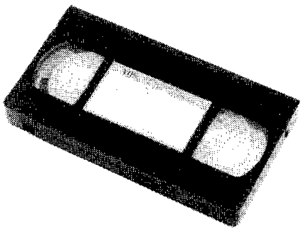
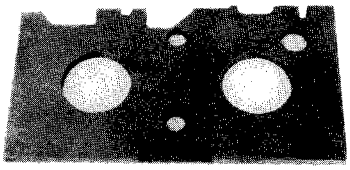
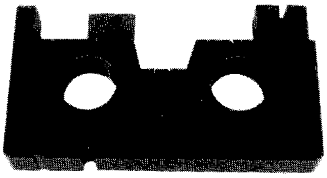
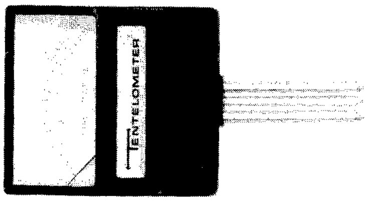
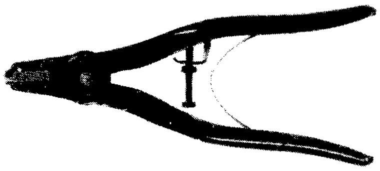
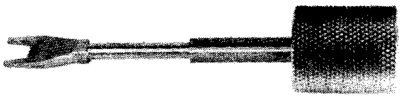
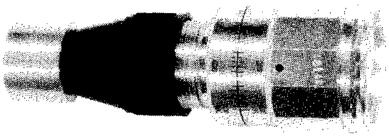
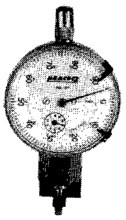
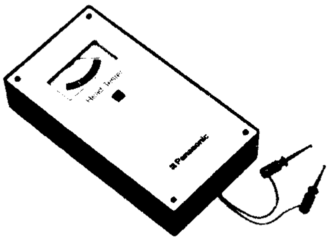
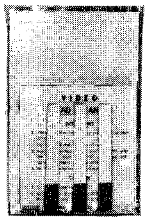
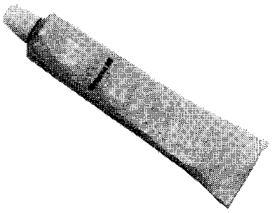
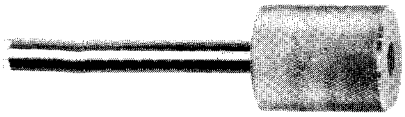
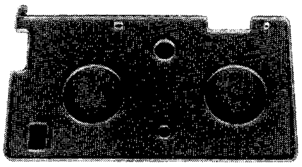

Screw (B)
Belt
Belt Cover
Screw (C)

Fig.M51.

Servicing Fixtures & Tools

VFM8100H3D VHF Alignment Tape 	VFK0191 Post Adjustment Plate 	VFK0188 Cassette Holder Fixture 
Back Tension Meter (Tentelometer, Made in U.S.A.)  	VFK0144 Retaining Ring Remover (3mm) VFK0145 Retaining Ring Remover (4mm) 	VFK0189 H-Portion Adj. Fixture 
VFK0133 Dial Torque Gauge VFK0134 Adaptor for VFK0133 	VFK0146 Hex. Wrench (0.9mm) VFK75 Hex. Wrench (1.25mm) VFK76 Hex. Wrench (1.5mm) 	VFK0190 Reel Table Height Fixture 
VFK0135 Eccentric Screwdriver 	VFK0184 Head Tester  	VFK27 Head Cleaning Stick 
VFK0136 Fine Adjustment Screwdriver 	VFK0185 Cleaning Cassette Tape 	MOR265 Morlytone Grease 
VFK0137 Post Adjustment Screwdriver 	VFK0187 Tension Post Adj. Fixture 	

ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete electrical adjustment procedures which may be required for electronic circuits of VHS video cassette recorder.

1. Test Equipments

   To perform the electrical adjustments completely, following equipment is required.

   1. VTVM (Vacuum Tube Volt Meter) or DVM (Digital Volt Meter)
      Voltage Range: 0.001-50V
   2. Dual-Trace Oscilloscope
      Voltage Range: 0.005-50V/div.
      Frequency Range: DC-10MHz
      Probes: 10:1 or 1:1
   3. Frequency Counter
      Frequency Range: 0-10MHz
   4. Signal Generator (Sinewave)
      Frequency Range: 0-10MHz
   5. Video Sweep Generator
      Frequency Range: 0-10MHz
   6. Colour Receiver or monitor TV
   7. Plastic Tip Driver
   8. VHS Alignment Tape (VFM8100H3D)

2. Adjustment Procedures

   These adjustment procedures consist of the following sections.

   1. Power Supply Section
   2. Servo & Still Section
   3. Video, Colour & Audio Section
   4. Demodulator Section

2-1. POWER SUPPLY SECTION

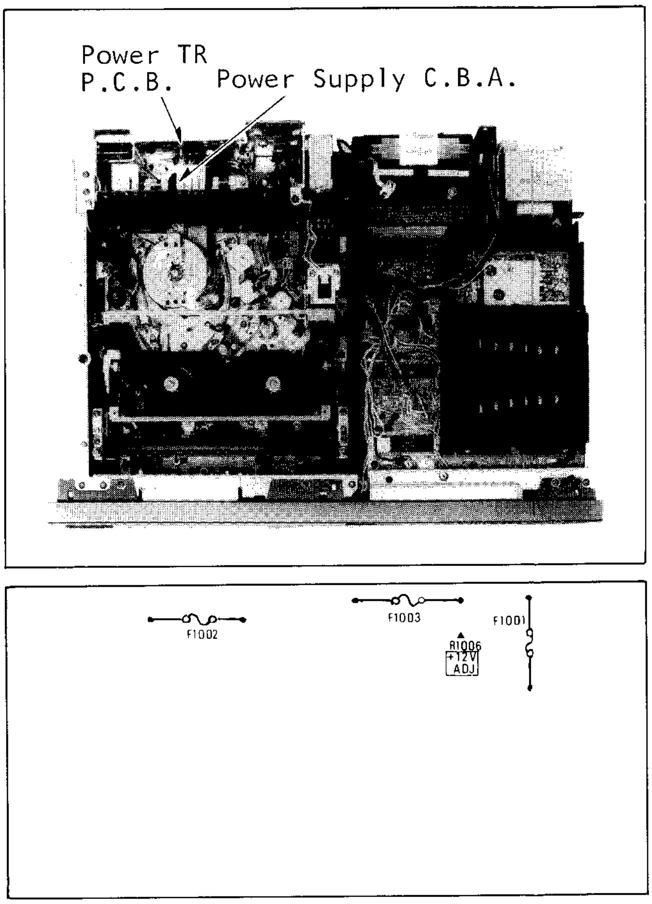


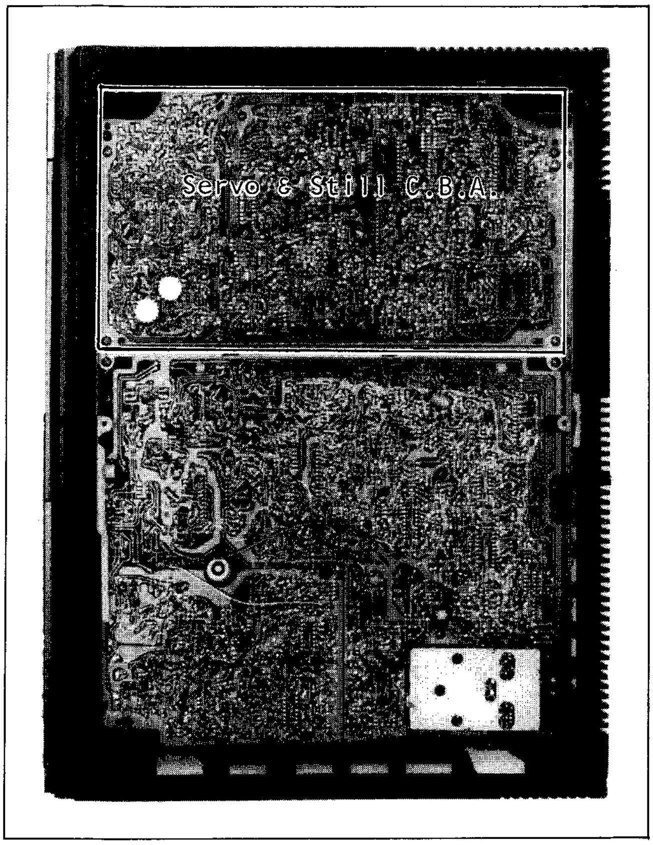
Fig. E1 Power Supply P.C. Board

2-1-1. +12V Adjustment

Test Point: TP1501
Adjustment: R1006 (+12V ADJ)

1. Connect the DVM to TP1501 on the Power TR P.C. Board.
2. Place the unit in STOP mode.
3. Adjust R1006 for 12.0 ± 0.15V DC.

2-2. SERVO & STILL SECTION


Servo & Still C.B.A.

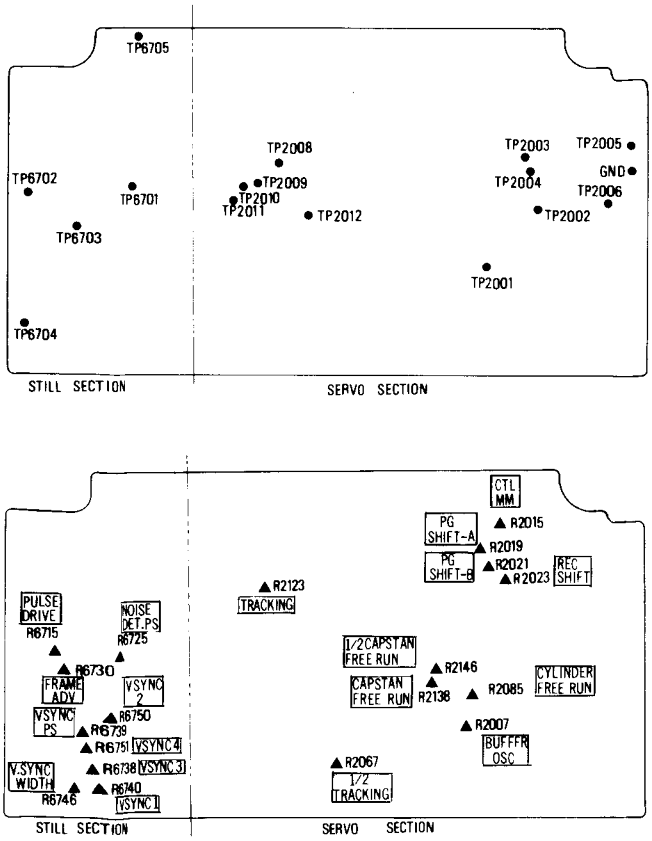

TP6705
TP6702
TP6701
TP6703
TP6704
TP2008
TP2009
TP2010
TP2011
TP2012
TP2003
TP2005
GND
TP2004
TP2006
TP2002
TP2001
STILL SECTION
SERVO SECTION
CTL MM
PG SHIFT-A
R2015
R2019
PG SHIFT-B
R2021
R2023
REC SHIFT
R2123
TRACKING
PULSE DRIVE
R6715
NOISE DET.PS
R6725
R6730
FRAME ADV
VSYNC 2
VSYNC PS
R6750
R6739
R6751
VSYNC4
V.SYNC WIDTH
R6738
VSYNC3
R6746
R6740
VSYNC1
1/2CAPSTAN FREE RUN
CAPSTAN FREE RUN
R2146
R2138
R2085
CYLINDER FREE RUN
R2007
BUFFFR OSC
R2067
1/2 TRACKING
STILL SECTION
SERVO SECTION

Fig. E2 Servo & Still P.C. Board

2-2-1. Buffer Oscillator Frequency Adjustment

Test Point: TP2001
Adjustment: R2007 (Buffer OSC)

1. Do not supply any video signal to the VIDEO INPUT on the front panel.
2. Connect the scope to TP2001 on the Servo Section, and place the unit in Rec·Play mode.
3. Adjust R2007 on the same section so that the "T" portion becomes 41 $\pm ^{1}_{0}$msec.

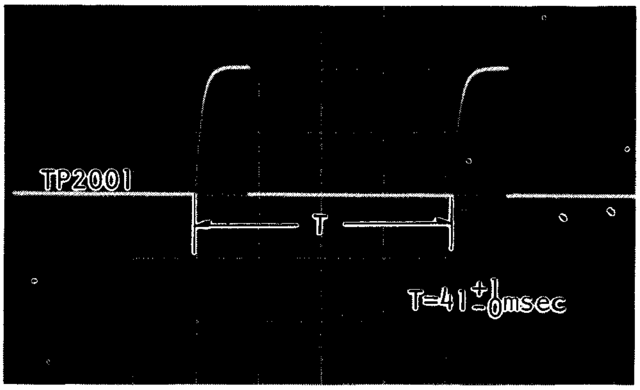


Fig. E3 5V/10msec.div.

4. Next, supply a video signal to the VIDEO INPUT.
5. Make sure that the above "T" portion is 40msec.

2-2-2. Monostable Multivibrator Adjustment of Control Pulse

Test Point: TP2005
Adjustment: R2015 (CTL MM)

1. Supply a video signal to the VIDEO INPUT on the front panel or tune in a local on-air TV program.
2. Connect the scope to TP2005 on the Servo Section, and place the unit in Rec·Play mode.
3. Adjust R2015 on the same section so that the waveform becomes as shown below.

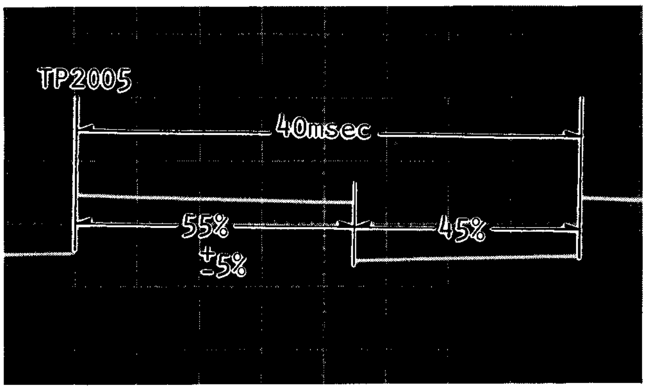


Fig. E4 2V/5msec.div.

2-2-3. Normal Cylinder Free Run Adjustment

Test Points: TP2002, TP2003, TP2004
Adjustment: R2085 (Cylinder Free Run)

1. Supply a video signal to the VIDEO INPUT on the front panel or tune in a local on-air TV program.
2. Connect the DVM to TP2004 on the Servo Section through the filter as shown below.

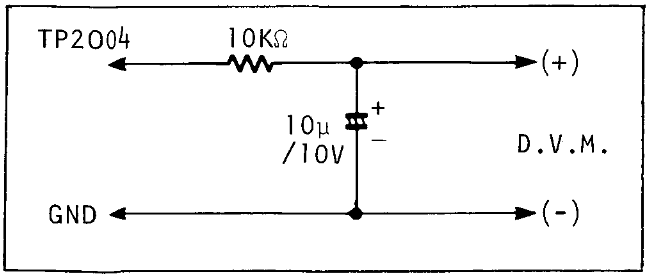


Fig. E5 Filter (1)

3. Connect the scope CH1 to TP2002 and CH2 to TP2003 on the Servo Section.
4. Place the unit in Rec·Play mode.
5. Pre-adjust R2085 on the same section so that the both waveforms, head switching pulse and trapezoidal waveform are phase-locked.

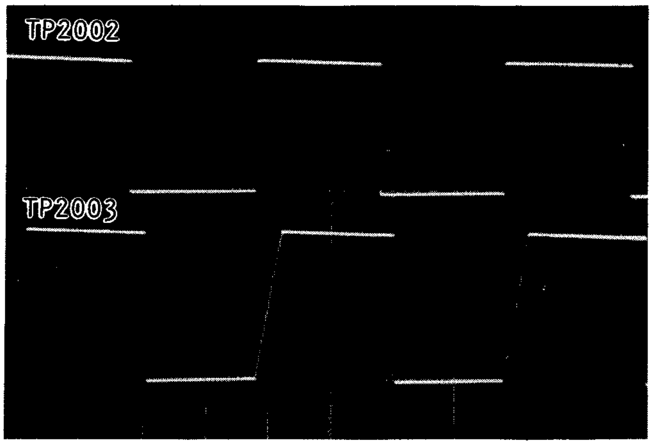


Fig. E6 CH1 5V/10msec.div.
CH2 5V/10msec.div.

6. Adjust R2085 so that the indication of DVM becomes 5.4V ± 0.1V DC.
7. Make sure that above waveforms are phase-locked.

2-2-4. Normal Capstan Free Run Adjustment

Test Points: TP2009, TP2010, TP2011
Adjustment: R2138 (Capstan Free Run)

1. Supply a video signal to the VIDEO INPUT on the front panel on tune in a local on-air TV program.
2. Connect the DVM to TP2011 on the Servo Section through the filter as shown below.

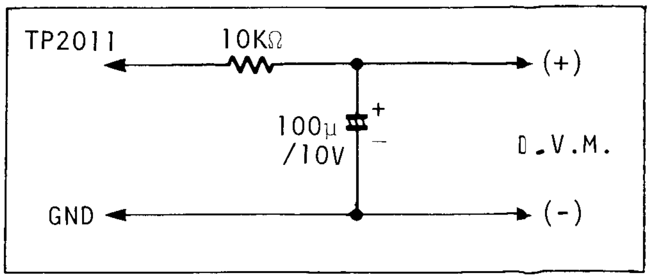


Fig. E7 Filter (2)

3. Connect the scope CH1 to TP2009 and CH2 to TP2010 on the Servo Section.
4. Place the unit in Rec·Play mode.
5. Pre-adjust R2138 on the same section so that the both waveforms, trapezoidal waveform and sampling pulse are phase-locked.

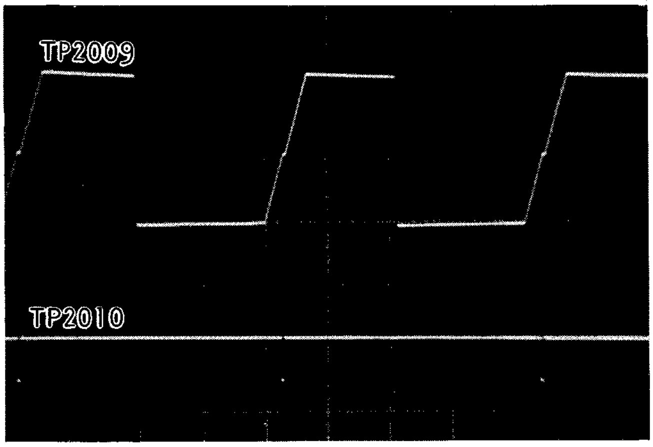


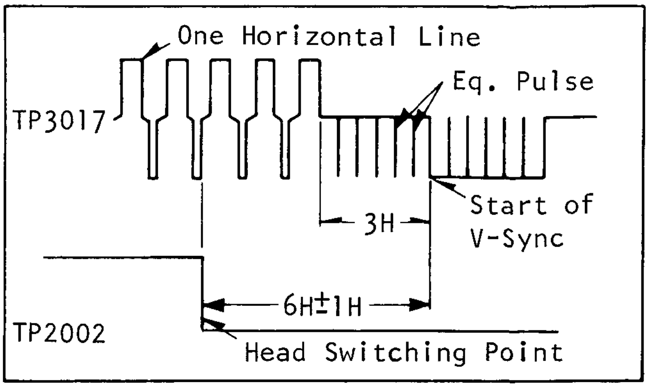
Fig. E8 CH1 5V/10msec.div.
CH2 5V/10msec.div.

6. Adjust R2138 so that the indication of DVM becomes 5.2 ± 0.2V DC.
7. Next, place the unit in X2 Play mode.
8. Make sure that the both waveforms are phase-locked.

2-2-5. Rec Shifter Adjustment

Test Points: TP2002, TP3017
Adjustment: R2023 (Rec Shift)

1. Supply a video signal to the VIDEO INPUT on the front panel or tune in a local on-air TV program.
2. Connect the scope CH1 to TP3017 on the Video, Colour & Audio P.C. Board and CH2 to TP2002 on the Servo Section.
3. Place the unit in Rec·Play mode.
4. Set the scope to the Delay mode, and expand the V-sync portion.
5. Adjust R2023 on the Servo Section so that the head switching position 6 ± 1H before the beginning of the vertical sync as shown below.



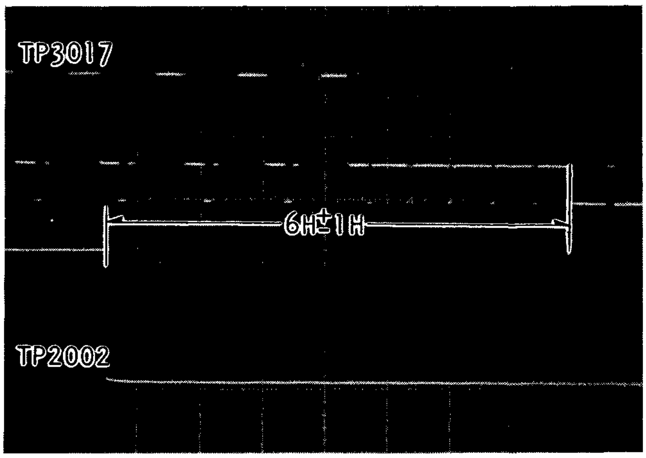


Fig. E9 CH1 0.5V/50µsec.div.
CH2 5V/50µsec.div.

2-2-6. Normal Speed Tracking Monostable Multivibrator Adjustment

Test Points: TP2002, TP2008
Adjustment: R2123 (Tracking)

1. Set the TRACKING VR on the front panel to the center detent point.
2. Supply a CCIR signal to the VIDEO INPUT on the same panel, and make a recording for a few minutes.
3. Connect the scope CH1 to TP2002 and CH2 to TP2008 on the Servo Section.
4. Playback the just recorded portion and adjust R2123 on the same section so that the both waveforms becomes as shown below.

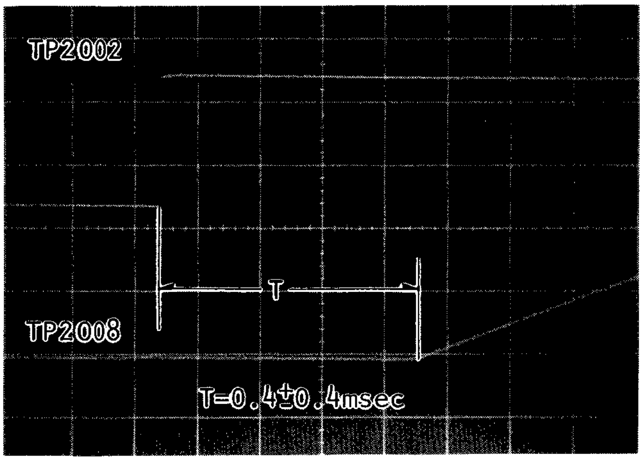


Fig. E10 CH1 0.1V/0.1msec.div.
CH2 5V/0.1msec.div.

5. Next, place the unit in X2 Play mode.
6. Make sure that the "T" portion is 2.5 ± 1msec as shown below.

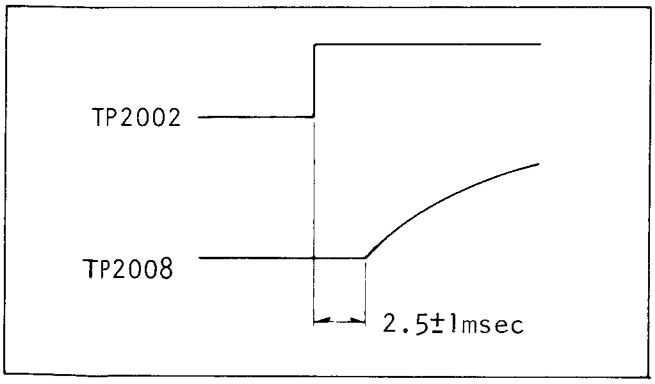


Fig. E11 X2 Play mode

2-2-7. PG Shifter Adjustment

Test Points: TP2002, TP3017
Adjustments: R2019, R2021 (PG Shift)

1. Supply a colour bar signal to the VIDEO INPUT on the front panel.
2. Connect the scope CH1 to TP3017 on the Video, Colour & Audio P.C. Board and CH2 to TP2002 on the Servo Section.
3. Make a recording for a few minutes.
4. Adjust R2021 on the Servo Section so that the falling edge of switching pulse is 6 ± 1H before the beginning of the V-sync as shown below.

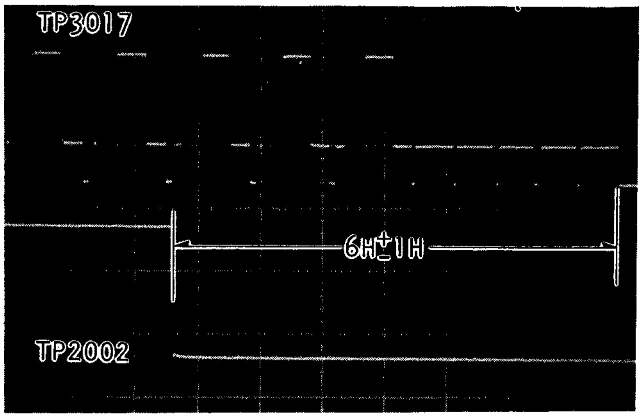


Fig. E12 CH1 1V/50µsec.div.
CH2 5V/50µsec.div.

5. Change the slope selector on the scope front "+" to "-" and adjust R2019 on the same section so that the rising edge of switching pulse is 6 ± 1H before the beginning of the V-sync as shown below.

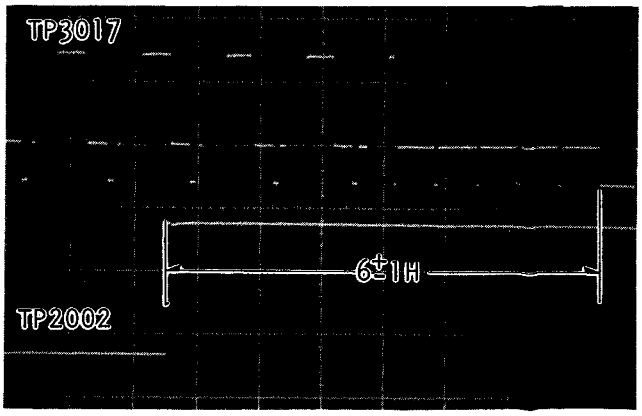


Fig. E13 CH1 1V/50µsec.div.
CH2 5V/50µsec.div.

6. Switch the slope selector on the scope to either (+) or (-) and adjust R2019 and R2021 for less than 10μsec difference.

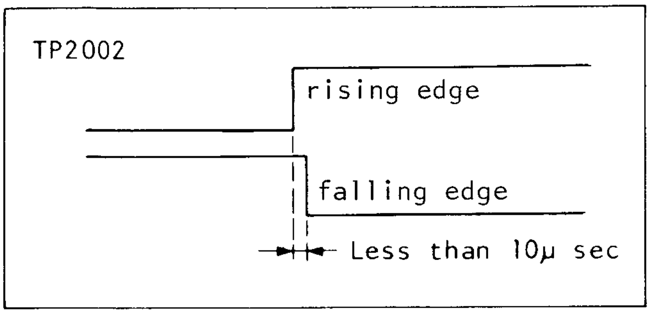


Fig. E14 Switching Edge Difference

2-2-8. X1/2 Speed Tracking Monostable Multivibrator Adjustment

Test Points: TP2002, TP2008
Adjustment: R2067 (X1/2 Tracking)

1. Supply a CCIR signal to the VIDEO INPUT on the front panel and make a recording for a few minutes.
2. Playback the just recorded portion in X1/2 Slow mode.
3. Set the TRACKING VR on the same panel to the center detent point.
4. Looking at the TV monitor and adjust the R2067 on the Servo Section so that the noise band is minimum.

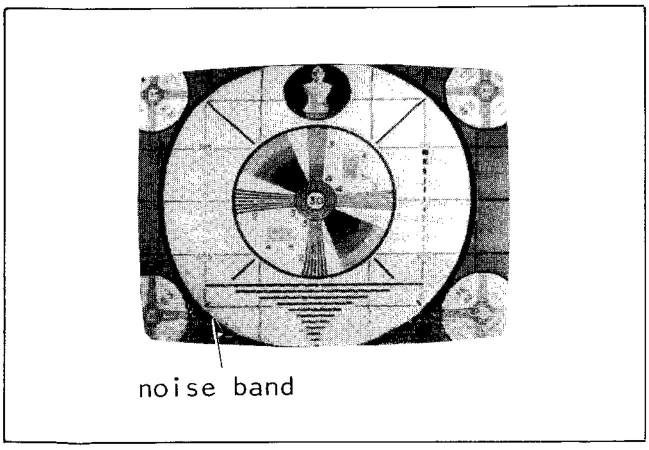


Fig. E15 Noise Band on the TV Monitor

5. Connect the scope CH1 to TP2002 and CH2 to TP2008 on the Servo Section.
6. During X1/2 Slow mode, make sure that the both waveforms becomes as shown below.

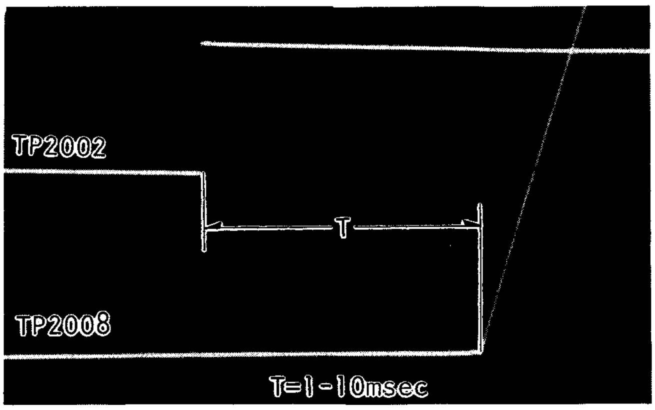


Fig. E16 CH1 0.2V/2msec.div.
CH2 5V/2msec.div.

2-2-9. X1/2 Speed Capstan Free Run Adjustment

Test Points: TP2009, TP2010, TP2011
Adjustment: R2146 (X1/2 Capstan Free Run)

1. Playback the alignment tape (VFM8100H3D).
2. Connect the DVM to TP2011 on the Servo Section through the filter as shown below.

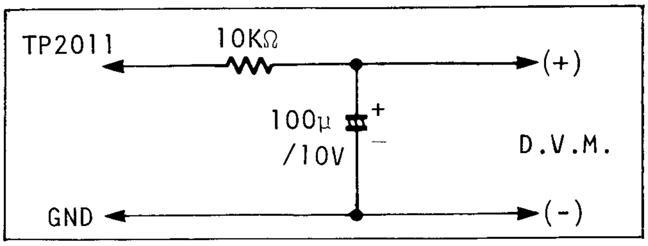


Fig. E17 Filter (3)

3. Connect the scope CH1 to TP2009 and CH2 to TP2010 on the Servo Section.
4. Pre-adjust R2146 on the same section so that the both waveforms, trapezoidal waveform and sampling pulse are phase-locked.

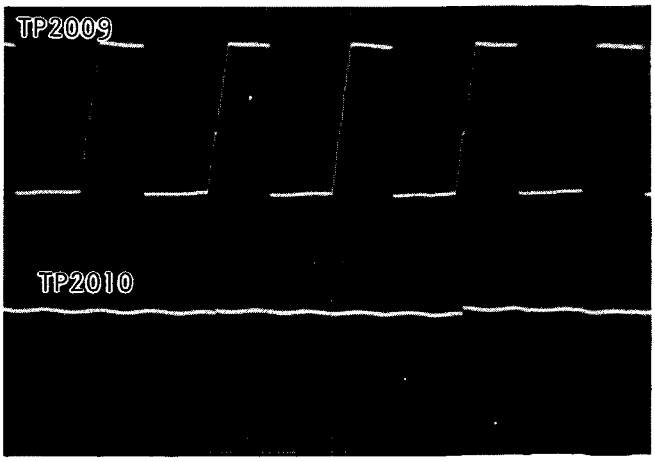


Fig. E18 CH1 5V/20msec.div.
CH2 2V/20msec.div.

5. Adjust R2146 so that the indication of DVM becomes 5.0 ± 0.2V DC.

2-2-10. Pulse Width Adjustment of Frame Advance

Test Points: TP6702, TP2002
Adjustment: R6715

1. Insert a cassette tape, and place the unit in Still mode.
2. Connect the scope CH1 to TP2002 on the Servo Section and CH2 to TP6702 on the Still Section. Set the scope to CHOP mode.
3. Adjust R6701 on the Still Section so that the pulse width "T" becomes 8 ± 0.5msec as shown below.

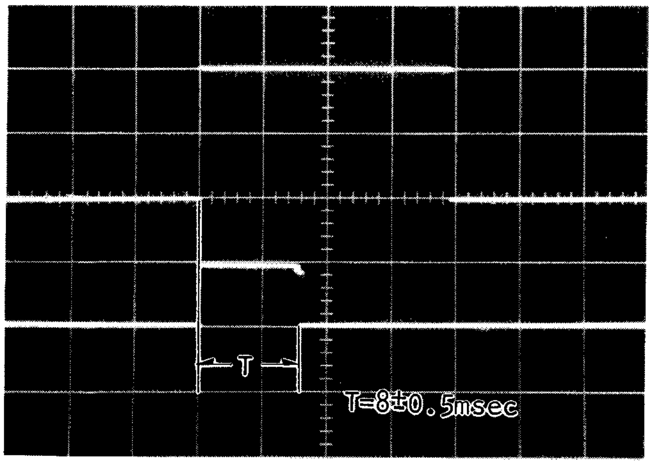


Fig. E19 CH1 5V/5msec.div.
CH2 5V/5msec.div.

2-2-11. Phase Adjustment of Noise Detection Pulse

Test Points: Pin (3) of IC6706, TP2002
Adjustment: R6725

1. Playback a tape and place the unit in Still mode.
2. Connect the scope CH1 to TP2002 on the Servo Section and CH2 to Pin (3) of IC6706 on the Still Section. Set the scope to CHOP mode.
3. Adjust R6725 on the Still Section so that the phase difference "A" becomes 250 ± 10μsec as shown be

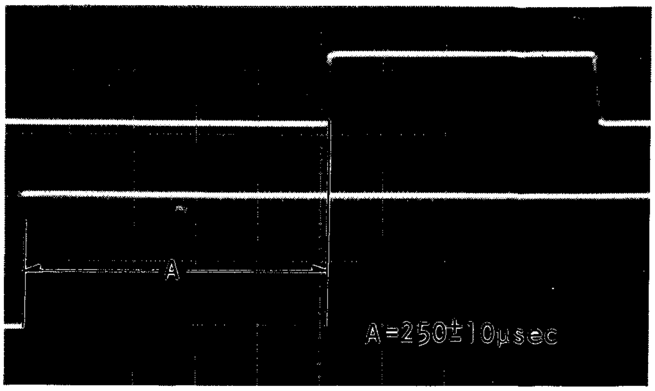


Fig. E20 CH1 5V/50μsec.div.
CH2 5V/50μsec.div.

2-2-12. Frame Advance Pulse Width Adjustment (x1/2 slow mode)

Test Points: TP6703, TP2002
Adjustment: R6730

1. Playback a tape and place the unit Still mode. And press the Frame Advance key continuously.
2. Connect the scope CH1 to TP2002 on the Servo Section and CH2 to TP6703 on the Still Section. Set the scope to CHOP mode.
3. Adjust R6730 on the Still Section so that the pulse width "B" becomes 15 ± 0.5msec as shown below.

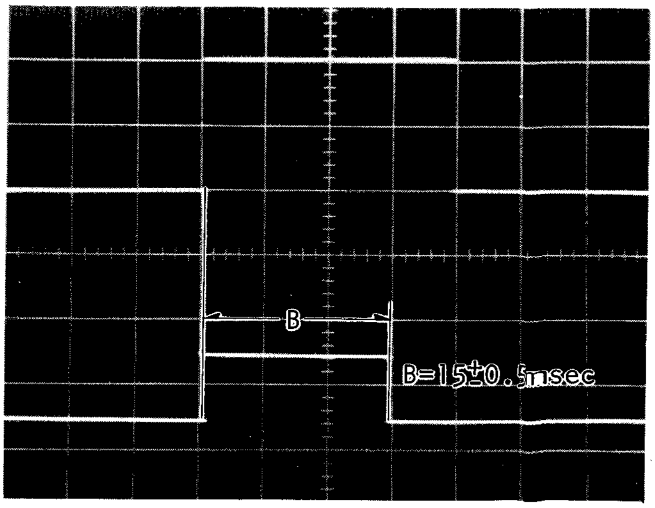


Fig. E21 CH1 5V/5msec.div.
CH2 5V/5msec.div.

2-2-13. Phase Adjustment of Additional Vertical Sync Pulse

Test Points: TP6704, TP2002
Adjustments: R6738 ... C   R6739 ... A'
R6740 ... A   R6750 ... B
R6751 ... D

1. Playback the alignment tape (VFM8100H3D) and place the unit in X1/2 Slow mode.
2. Connect the scope CH1 to TP2002 on the Servo Section and CH2 to TP6704 on the Still Section. Set the scope to CHOP mode.
3. Adjust R6738, R6740, R6750 and R6751 on the Still Section so that the each phase differences are shown below.
   144 ± 15μsec ... D
   192 ± 20μsec ... C
   240 ± 25μsec ... B
   96 ± 10μsec ... A

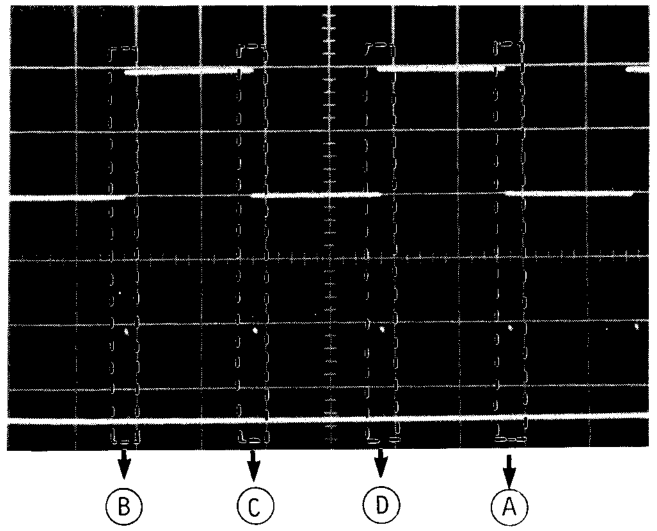


Fig. E22-(1) CH1 5V/10msec.div.
CH2 2V/10msec.div.

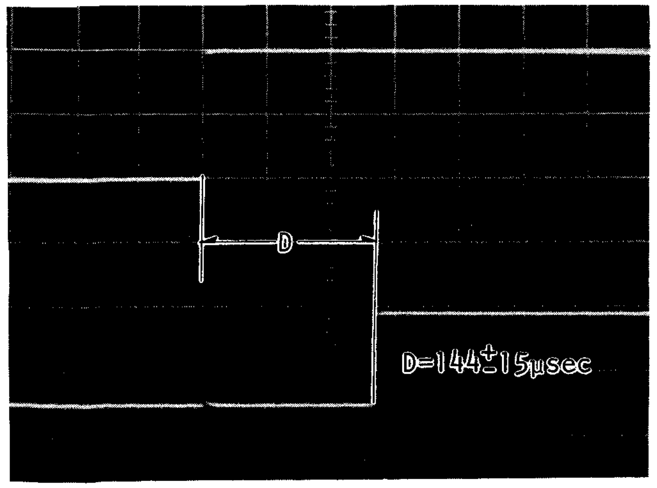


Fig. E22-(2) CH1 5V/50μsec.div.
CH2 2V/50μsec.div.

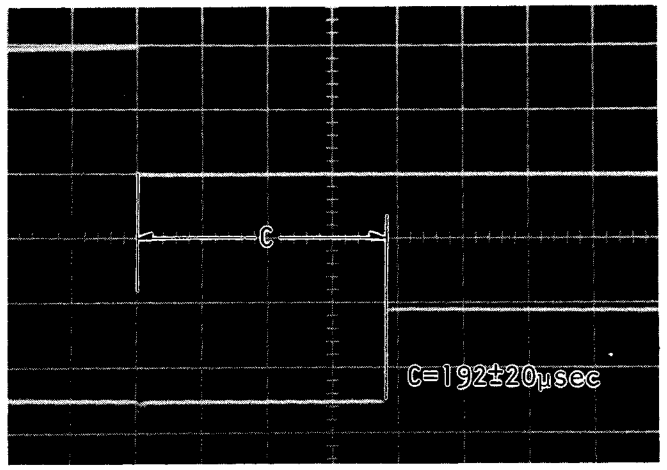


Fig. E22-(3)

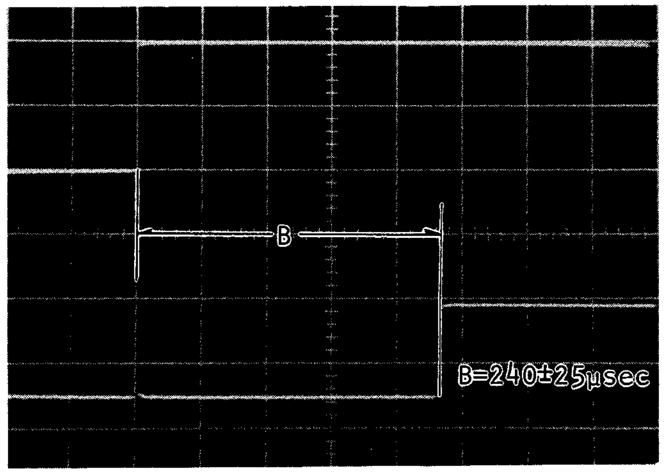


Fig. E22-(4)

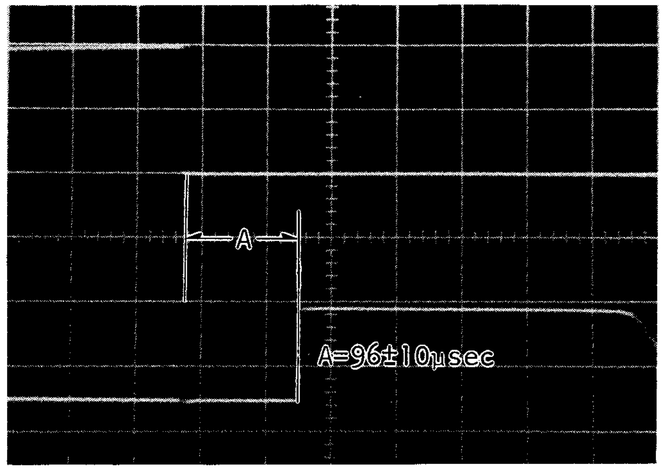


Fig. E22-(5) CH1 5V/50μsec.div.
CH2 2V/50μsec.div.

4. Place the unit in Cue or Rev mode.
5. Adjust R6739 so that phase difference (A' and D) becomes 144 ± 5μsec as shown in Fig. E23.

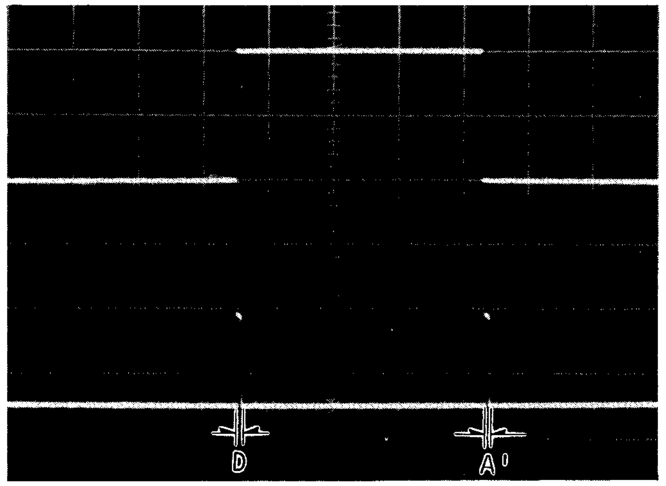


Fig. E23-(1)

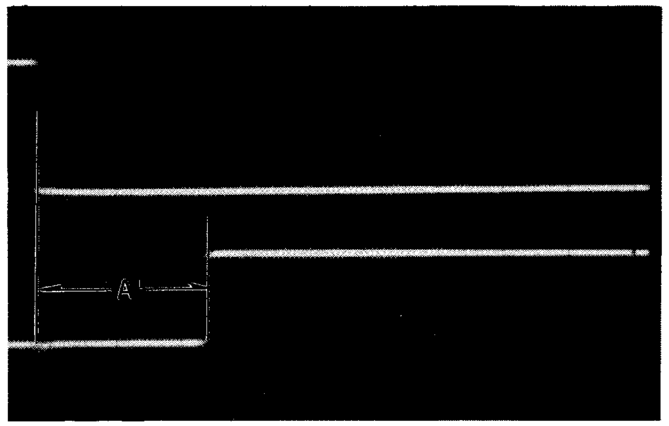


Fig. E23-(2) A' = 144 ± 15μsec
D = 144 ± 15μsec

6. Place the unit in Still or X2 Play mode.
7. Adjust R6739 and R6750 so that phase differences (A') and (B) are following values.
   A' = 144 ± 15μsec
   B = 240 ± 25μsec
   These phase differences are shown below.

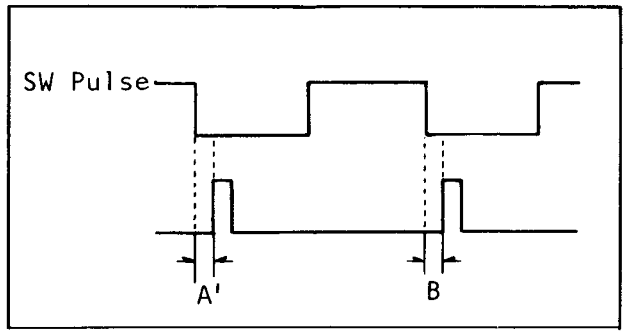


Fig. E24

2-2-14. Additional Vertical Sync Pulse Width Adjustment

Test Points: TP6704, TP2002
Adjustment: R6744

1. Playback the alignment tape (VFM8100H3D) and place the unit in X1/2 Slow mode.
2. Connect the scope CH1 to TP2002 on the Servo Section and CH2 to TP6704 on the Still Section. Set the scope to CHOP mode.
3. Make sure that the variable range of pulse width "A" becomes 120 ∿ 420 μsec by turning R6744 on the Still Section.
4. Adjust R6735 so that the pulse width "A" becomes 420 ± 20μsec as shown below.

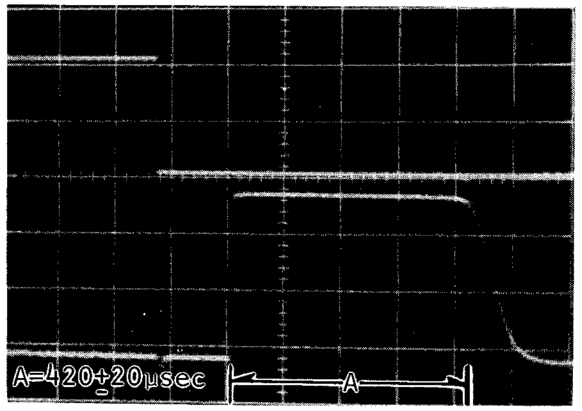
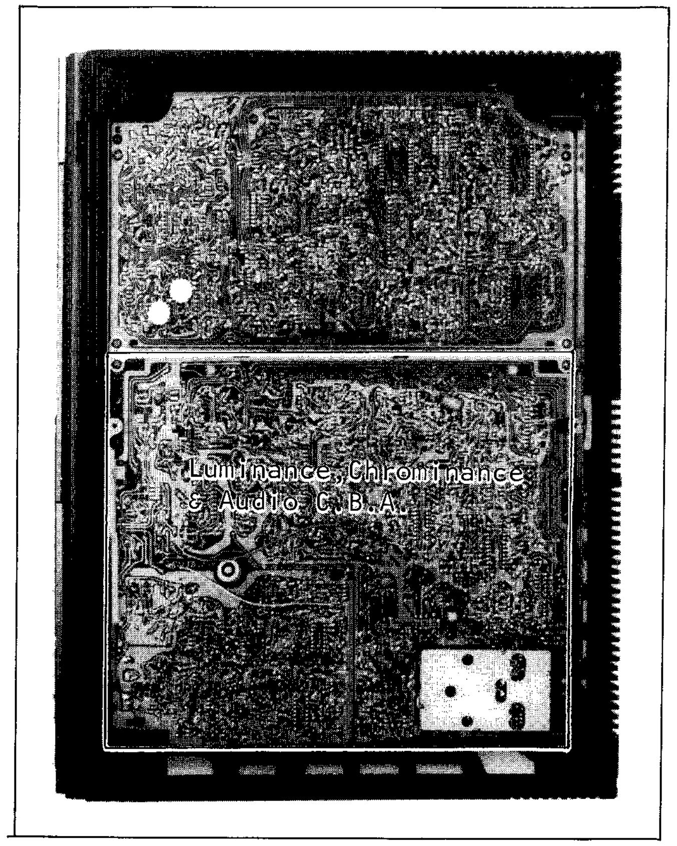


Fig. E25

2-3. Video, Colour & Audio Section


Luminance, Chrominance & Audio C.B.A.

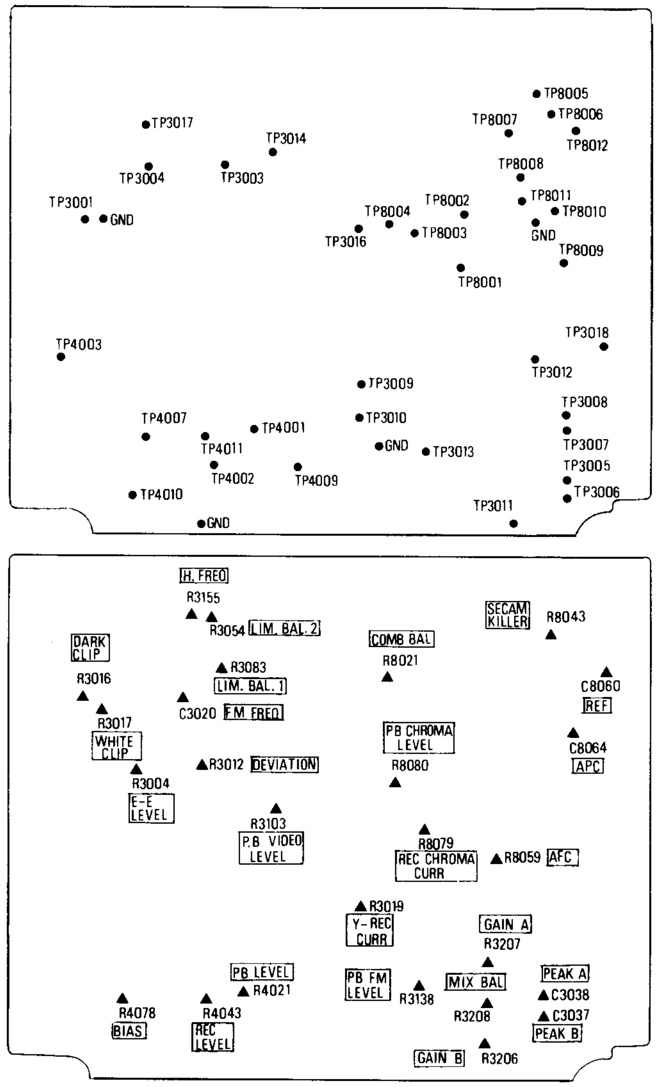

TP3017
TP3014
TP3004
TP3003
TP3001
GND
TP8005
TP8006
TP8007
TP8012
TP8008
TP8011
TP8010
TP8004
TP8002
TP3016
TP8003
GND
TP8009
TP8001
TP4003
TP3018
TP3012
TP3009
TP3008
TP4007
TP4001
TP3010
TP4011
GND
TP3013
TP3007
TP3005
TP4002
TP4009
TP3006
TP4010
TP3011
GND
H. FREQ
R3155
R3054
LIM. BAL. 2
SECAM KILLER
R8043
DARK CLIP
COMB BAL
R8021
R3083
LIM. BAL. 1
R3016
C8060
REF
R3017
C3020
FM FREQ
WHITE CLIP
PB CHROMA LEVEL
R8080
C8064
APC
R3012
DEVIATION
R3004
E-E LEVEL
R3103
P.B VIDEO LEVEL
R8079
REC CHROMA CURR
R8059
AFC
R3019
Y-REC CURR
GAIN A
R3207
PB LEVEL
R4021
PB FM LEVEL
R3138
MIX BAL
PEAK A
C3038
R4078
R4043
R3208
C3037
BIAS
REC LEVEL
PEAK B
GAIN B
R3206

Fig. E26

2-3-1. E-E Level Adjustment

Test Point: TP3017
Adjustment: R3004 (E-E Level)

1. Supply a colour bar signal to the VIDEO INPUT on the front panel and disconnect the connector from the VIDEO OUTPUT on the rear panel.
2. Place the unit in Rec mode and connect the scope to TP3017 on the Video Section.
3. Adjust R3007 on the same section so that the waveform becomes 2.0 ± 0.1Vp-p.

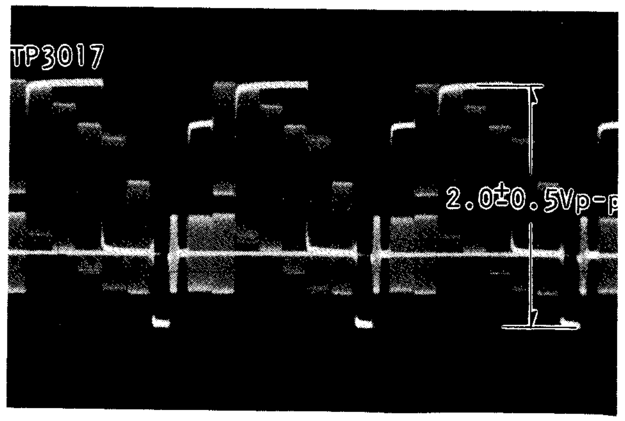


Fig. E27 0.5V/20μsec.div.

2-3-2. Dark & White Clip Adjustments

Test Point: TP3004
Adjustments: R3017 (White Clip)
R3016 (Dark Clip)

1. Supply a colour bar signal to the VIDEO INPUT on the front panel and place the unit in Rec mode.
2. Connect the scope to TP3004 on the Video Section.
3. Adjust R3016 and R3017 on the same section so that the waveform becomes as shown below.

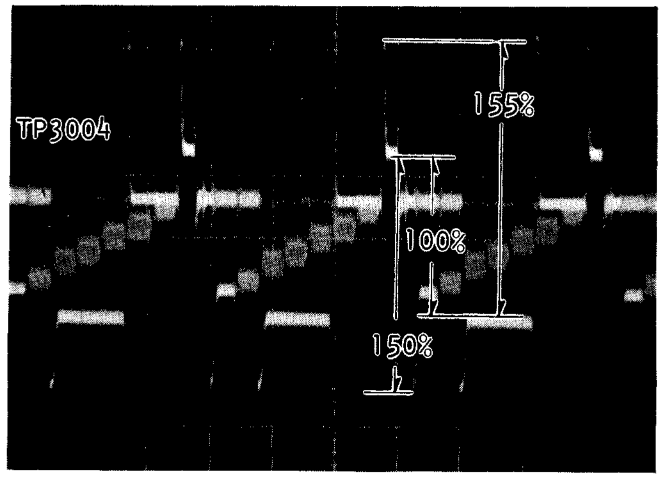


Fig. E28 0.2V/20μsec.div.

2-3-3. Video Rec Current Adjustment

Test Points: TP3007 (Hot)
TP3008 (GND)
Adjustments: R3019 (Y. Rec. Curr.)
R8079 (C. Rec. Curr.)

1. Supply a colour bar signal to the VIDEO INPUT on the front panel and place the unit in Rec·Play mode.
2. Connect the scope to TP3007 (Hot) and TP3008 (GND) on the Video Section.
3. Connect a jumper between TP3009 and GND on the same section.
4. Adjust R8079 on the same section so that the waveform becomes as shown below.

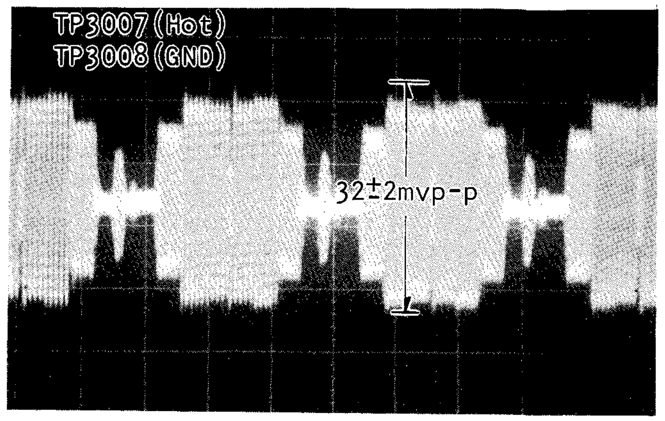


Fig. E29 10mV/20μsec.div.

5. Remove a jumper, and adjust R3019 on the same section so that the waveform becomes as shown below.

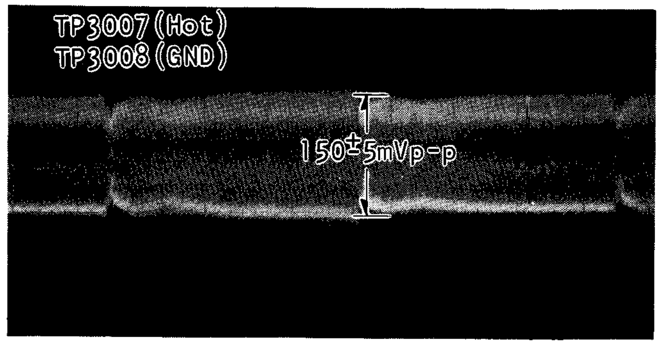


Fig. E30 50mV/5msec.div.

2-3-4. AFC Frequency Adjustment

Test Point: TP8009
Adjustment: R8059 (AFC)

1. Disconnect the connector from the VIDEO INPUT on the front panel.
2. Connect the frequency counter to TP8009 on the Colour Section, and place the unit in Rec mode.
3. Adjust R8059 on the same section so that the indication of the frequency counter becomes 15.625kHz ± 50Hz.
4. Next, supply a colour bar signal to the VIDEO INPUT.
5. Make sure that the indication of the frequency counter is 15.625kHz ± 1kHz.

2-3-5. APC Frequency Adjustment

Test Point: TP8010
Adjustment: C8064 (APC)

1. Disconnect the connector to the VIDEO INPUT on the front panel, and place the unit in Rec mode.
2. Connect a jumper between TP8011 and GND on the Colour Section.
3. Connect the frequency counter to TP8010 on the same section.
4. Adjust C8064 on the same section so that the indication of the frequency counter becomes 4.433619 MHz ± 50Hz.

2-3-6. Reference Oscillator Adjustment

Test Point: TP8012
Adjustment: C8060 (REF.)

1. Do not supply any video signal to the VIDEO INPUT on the front panel, and place the unit in Stop mode.
2. Connect the frequency counter to TP8012 on the Colour Section.
3. Adjust C8060 on the same section so that the indication of the frequency counter becomes 4.433619 MHz ± 10Hz.

2-3-7. Test Signal Frequency Adjustment

Test Point: TP3018
Adjustment: R3155 (H. Freq.)

1. Do not supply any video signal to the VIDEO INPUT on the front panel.
2. Set the Colour/Test Signal Select Switch on the Output Jack Board to TEST SIGNAL.
3. Place the unit in Stop mode.
4. Connect the frequency counter to TP3018 on the Video Section.
5. Adjust R3155 on the same section so that the indication of the frequency counter becomes 15.625kHz ± 70Hz.
6. Connect the scope to TP3018, and make sure that the waveform is as shown below.

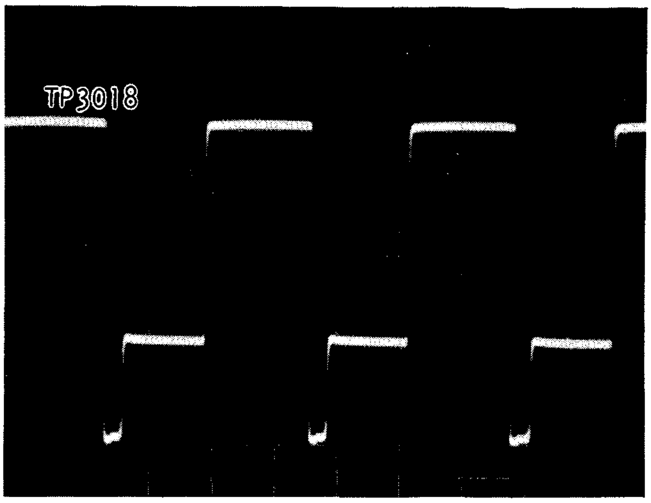


Fig. E31 20mV/20µsec.

2-3-8. Head Amp Peak Frequency Adjustment

Test Point: TP3013
Adjustments: C3037, C3038, R3206,
R3207, R3208

1. Set the output of the Sweep Generator to 100mVp-p at no load, and after that set it to 31.6mVp-p (-10dB).
2. Supply the above signal to TP3005 and TP3007 on the Video Section through the resistor 39kΩ as shown below.

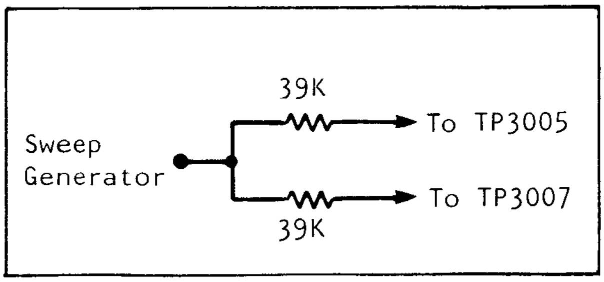


Fig. E32

3. Playback the video tape which is not recorded any video signal, and place the unit in Still mode.
4. Turn the R3136 on the Video Section to fully counter clockwise.
5. Connect the scope to TP3013 on the same section and adjust R3208 so that the level of CH1 and CH2 becomes same level at 2MHz portions.
6. Adjust R3206 and R3207 on the same section so that the level at 4.9MHz becomes 4 times bigger than the level at 2MHz as shown below.

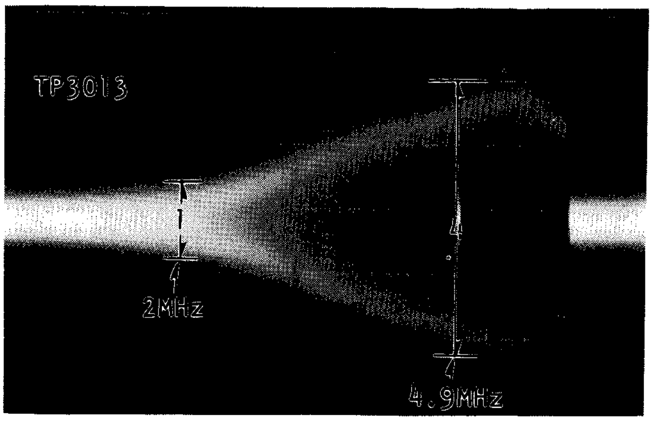


Fig. E33. 50mV/2msec.div.

7. Adjust C3037 and C3038 on the same section so that the peak on the scope becomes 4.9MHz as shown below.

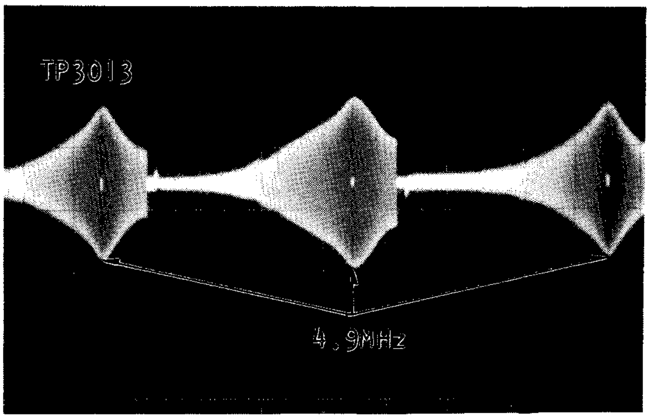


Fig. E34. 50mV/2msec.div.

2-3-9. Head Amp Frequency Response Adjustment

Test Point: TP3014, TP3017
Adjustments: R3206, R3207, R3208,
R3138

1. Set the output level of the Sweep Generator as shown below.

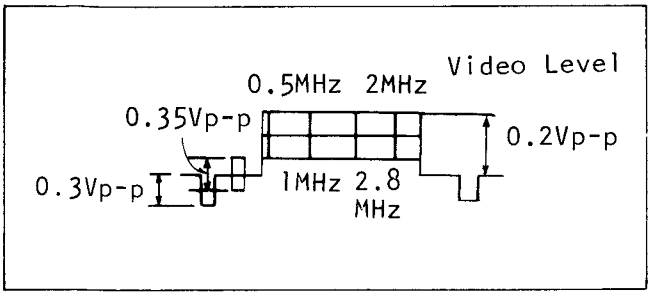


Fig. E35.

2. Supply the above signal to the VIDEO INPUT on the front panel, and make a recording for a few minutes.
3. Connect the scope to TP3014 on the Video Section, and playback the just recorded portions.
4. Adjust R3138 on the same section so that the level of TP3014 becomes 1.0Vp-p.

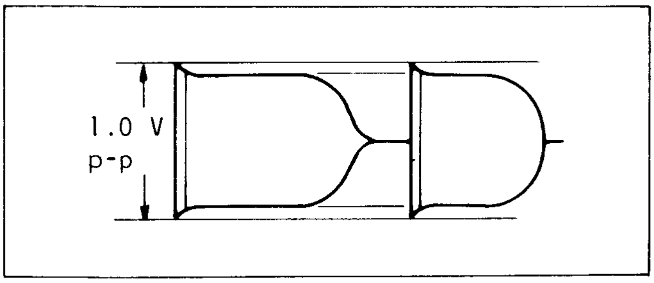


Fig. E36.

5. Change the connection of the scope from TP3014 to TP3017 on the same section, and adjust R3206 and R3207 so that the level at 2.8MHz portion becomes 50% down at 0.1MHz portion as shown below.

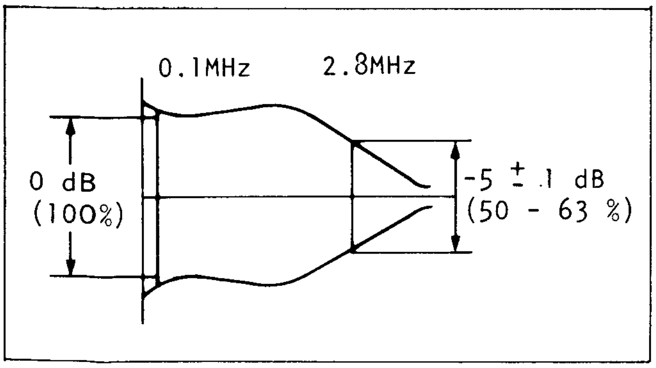


Fig. E37.

6. Change the connection of the scope from TP3017 to TP3014 and Adjust R3208 on the same section so that the both levels (CH1, CH2) are balanced.

2-3-10. Limiter Balance Adjustment

Test Points: TP3016, TP3014
Adjustment: R3083

1. Playback a blank tape and place the unit in Still mode.
2. Supply the output of the Sweep Generator to TP3011 on the Video Section.
3. Connect the scope to TP3014 on the same section and set the output of the Sweep Generator as shown below on the scope.

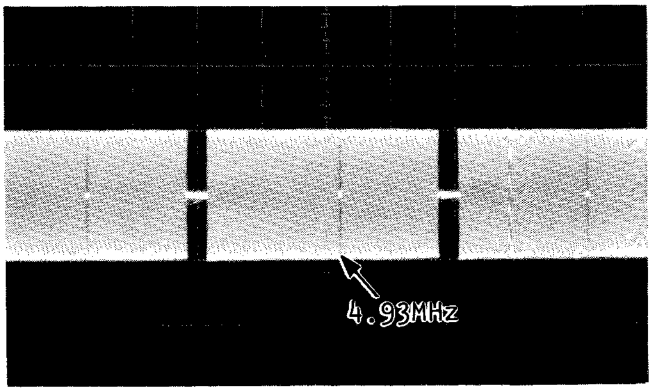


Fig.E38.0.5V/5msec.div.

4. Turn the R3054 to fully counter clockwise, and connect the scope to TP3016 on the same section.
5. Adjust R3083 on the same section so that the waveform at 4.93MHz portion becomes as shown below.

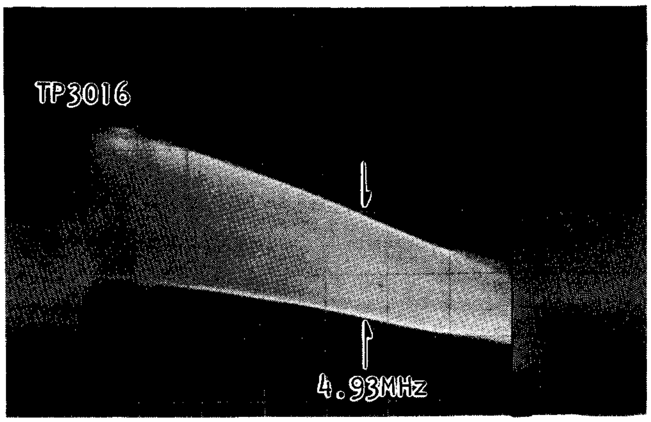


Fig.E39.0.5V/2msec.div.

2-3-11. Double Limiter Balance Adjustment

Test Point: TP3016
Adjustment: R3054

1. Supply the output of the Sweep Generator to TP3011 and connect the scope to TP3016 on the Video Section.

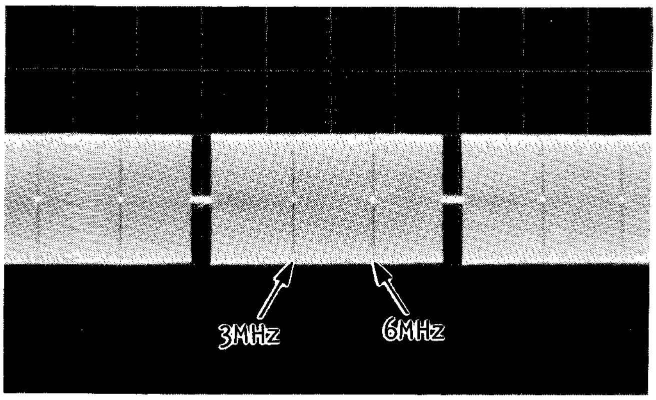


Fig.E40 0.5V/5msec.div.

2. Adjust R3054 on the same section so that the waveform at 3MHz and 6MHz portions becomes as shown below.

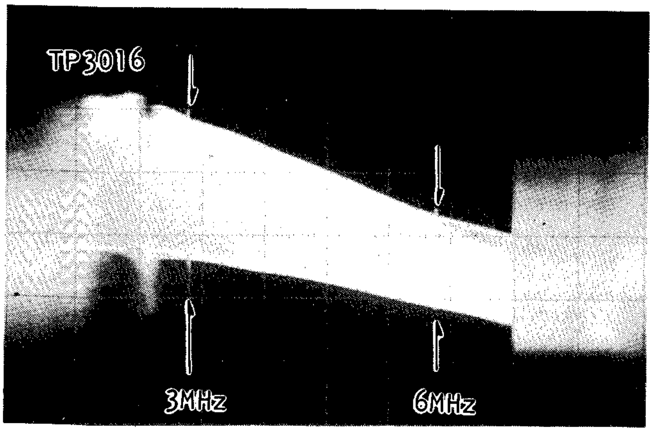


Fig.E41 0.5V/2msec.div.

2-3-12. Playback Level Adjustment

Test Point: TP3017
AdjustmentS: R3103, R8080

1. Supply a colour bar signal to the VIDEO INPUT on the front panel, and make a recording for a few minutes.
2. Connect the scope to TP3017 on the Video Section, and playback the just recorded portions.
3. Adjust R3103 on the same section so that the video level becomes 2.0 ± 0.1Vp-p.
4. Adjust R8080 on the same section so that the cyan level becomes 1.1 ± 0.1Vp-p.

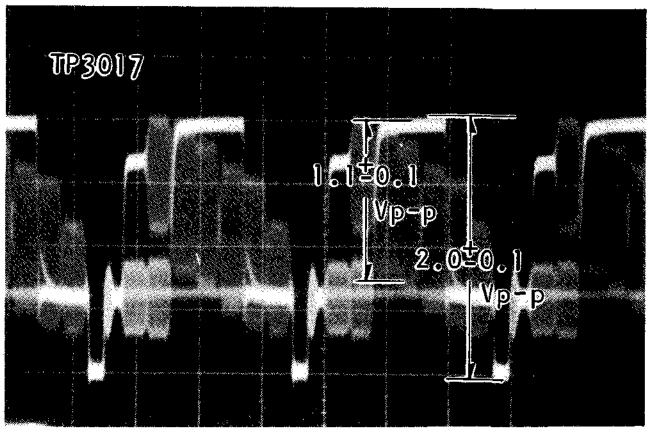


Fig.E42 0.5V/20µsec.div.

2-3-13. Sync Tip Frequency and Deviation Adjustment

Test Points: TP3009, TP3004
Adjustments: C3020, R3012

1. Do not supply any video signal to the VIDEO INPUT on the front panel.
2. Place the unit in Rec mode, and connect the frequency counter to TP3009 on the Video Section.
3. Adjust C3020 on the same section so that the indication of the frequency counter becomes 3.8MHz ± 0.1MHz.
4. Connect the scope to TP3004, on the same section, and adjust R3012 so that the "V" portion becomes 0.5Vp-p.

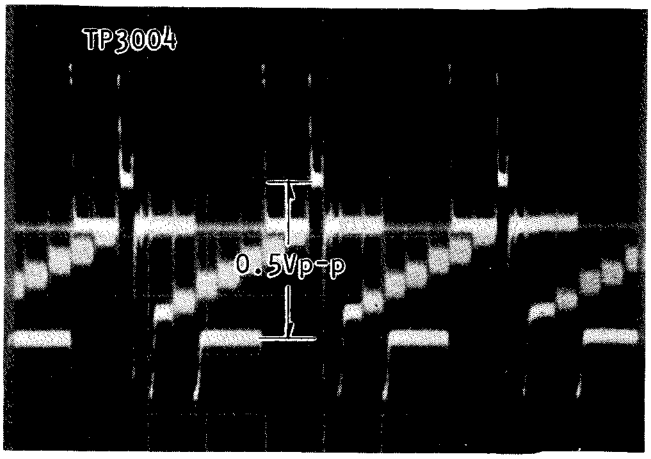


Fig.E43 0.2V/20µsec.div.

2-3-14. Audio Playback Gain Adjustment

Test Point: TP4001
Adjustment: R4021

1. Playback the alignment tape (VFM8100H3D), and set the Dolby N.R. Sw. on the front panel to off.
2. Connect the scope to TP4001 on the Audio Section.
3. Adjust R4021 on the same section so that the waveform becomes 320 ± 20mVp-p as shown below.

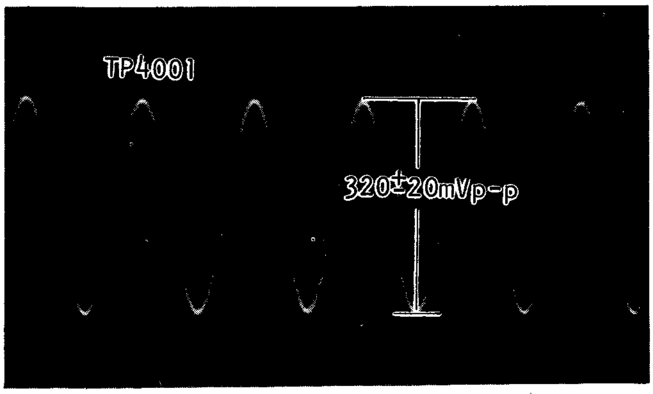
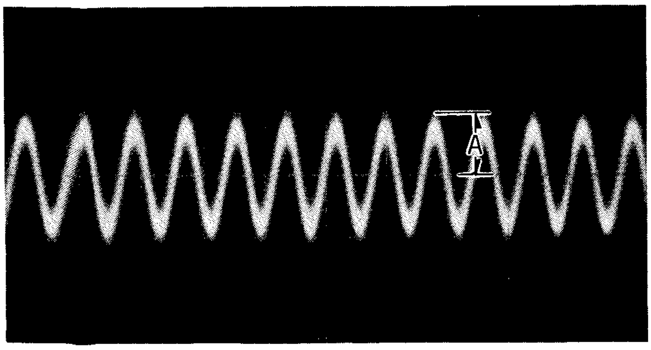


Fig. E44

2-3-15. Audio Bias Current Adjustment

Test Point: Audio Head Test Pin
Adjustment: R4078

1. Do not supply any audio signal to the Audio Input on the front panel, and turn off the Dolby N.R. Switch on the same panel.
2. Connect the scope to Audio Head Test Pin on the A/C Head P.C. Board and place the unit in Rec· Play mode.
3. Adjust R4078 on the Audio Section so that the waveform becomes 5.1 ± 0.1mVp-p.



A = 5.1 ± 0.1mVp-p
(= 3.6 ± 0.1mVrms)
Fig.E45 5mV/20µsec.div.

2-3-16. Audio Rec Current Adjustment

Test Point: TP4001
Adjustment: R4043

1. Supply audio signal (1kHz, -10dB) to the Audio Input on the front panel and make a recording for a few minutes.
2. Connect the scope to TP4001 on the Audio Section and playback the just recorded portions.
3. Make sure that the amplitude of waveform is 1.27 ± 0.12Vp-p.

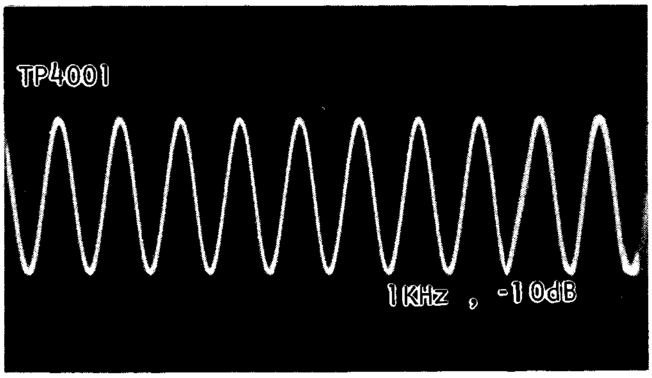


Fig.E46 0.5V/1msec.div.

4. If it is not, then place the unit in Rec · Play mode again and adjust R4043 on the same section until the value of playback level becomes 1.27 ± 0.12Vp-p.

TV DEMODULATOR SECTION

MODEL: NV-7200-E, EG

This section provides complete electrical adjustment procedures which may be required for TV demodulator circuit.

Test Equipment

To make adjustments completely, following equipments are required.

1. VIF Sweep Generator
   ..... 38.9MHz
2. SIF Sweep Generator
   ..... 5.5MHz ± 150kHz
3. CW Oscillator
4. Digital Volt Meter
5. Oscilloscope
6. Bias Jig

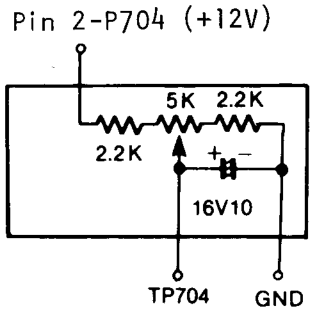
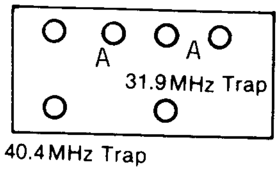


Fig. E47 Bias Jig

A. VIF Sweep Adjustment

1. Connect the H-Out of the VIF Sweep Generator to the H-In of the scope.
2. Connect the Marker-Out of the VIF Sweep Generator to the Marker-In or Z terminal of the Scope.
3. Set the Channel Selector to the VHF High position and tune the maximum frequency position.
4. Connect the jumper wire between TP710 (RF AGC) on the tuner and ground.
5. Connect the 100Ω resistor between TP708 and TP709.
6. Connect the scope to TP707.
7. Supply the output of the VIF Sweep Generator to Test Point of the Tuner.
8. Adjust the output of the VIF Sweep Generator so that the level of the sweep output becomes 1.0Vp-p.
9. Release 20dB from the attenuator of the Sweep Generator.
10. Connect the P704 Jig to P704.
11. Connect the Bias Jig to TP704, Pin 2 of P704 Jig and ground.
12. Adjust the IF AGC bias so that the Sweep wave becomes 1.0Vp-p.
13. Adjust T702 so that the attenuation of the 33.4MHz trap becomes maximum.
14. Adjust T701 so that the attenuation of the 40.4MHz trap becomes maximum.
15. Adjust the tuner converter coil and the A coil of T701 so that the Sweep output waveform becomes as shown Fig. E49.



A Coil: A Coil adjustment is required, if not VIF waveform can not meet as shown in Fig. E49.

Fig. E48 IF Filter T701

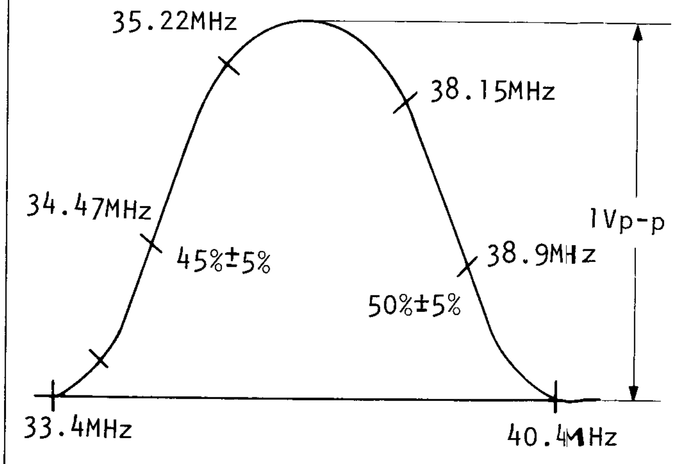


Fig. E49 VIF Waveform

B. 38.9MHz Tuning Coil Adjustment

1. Test equipments connection is the same as in the VIF Sweep Adjustment.
2. Connect the output of the VIF Sweep Generator to TP703
3. Remove the 100Ω resistor between TP708 and TP709.
4. Turn T703 2 turns clockwise or counterclockwise.
5. Adjust the sweep output so that the sweep wave becomes 0.1Vp-p.
6. Adjust T704 so that the marker position of 38.9MHz becomes maximum as shown in Fig. E50.

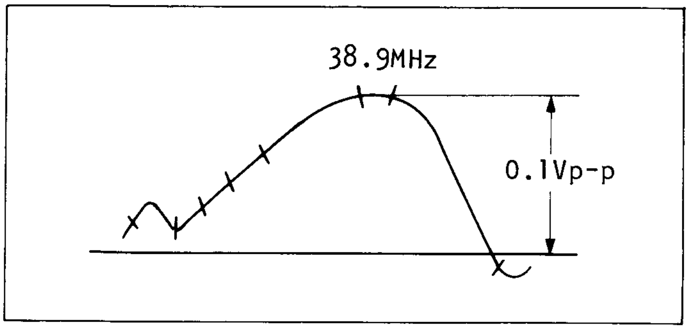


Fig. E50

7. After this is completed, adjust T703 so that the marker position of the 38.9MHz area becomes as shown in Fig. E51.

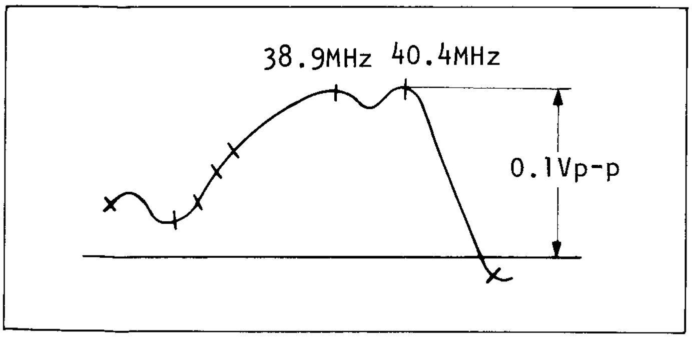


Fig. E51

C. SIF Sweep Adjustment

1. Connect the H-Out of the SIF Sweep Generator to the H-In of the scope.
2. Connect the Marker-Out of the SIF Sweep Generator to the Marker-In or Z-terminal of the scope.
3. Connect the Digital Voltmeter to the sweep output and set the sweep output to 354mV.
4. Connect the output of the SIF Sweep Generator to TP706.
5. Connect the scope to TP701.
6. Adjust T705 for maximum peak-to-peak amplitude of response "S" curve as shown in Fig. E52.

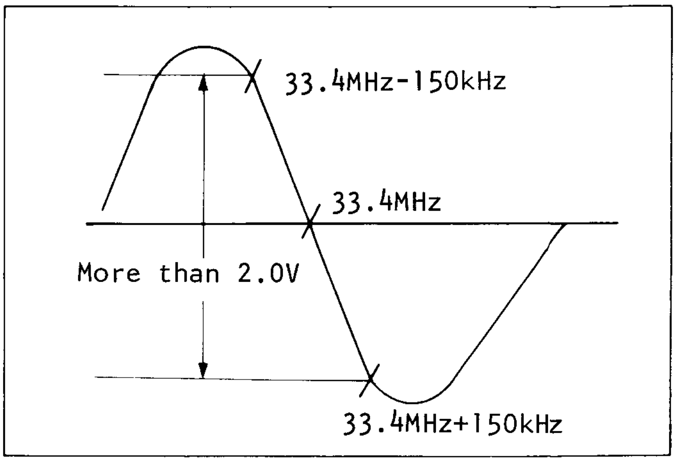


Fig. E52 Response "S" Curve

7. Confirm that the level between the 150kHz marker position is more than 1.0V.

D. AFC Adjustment

1. Set the CW oscillator so that the 38.9MHz CW signal becomes 1Vp-p.
2. Supply this signal to the Tuner Test Point.
3. Connect the Digital Voltmeter to the Tuner AFC terminal TP702.
4. Confirm the reading "A" of the Digital Voltmeter is between 6.5V and 7.0V, when the AFC switch is off.
5. Set the AFC switch is "ON".
6. Adjust T703 so that the level at the AFC terminal TP702 becomes "A" ± 0.3V.
7. Change the frequency of the CW oscillator ±100kHz, centered at 38.9MHz and confirm that the difference of the AFC voltage is more than ±2V.

E. Confirmation of Video Level and Adjustment of Burst Level

1. Supply the PAL Standard Colour Bar signal to RF In terminal and tune this signal.
2. Connect the oscilloscope to the Hot Test Point to TP705 and the Ground Test Point to TP713.
3. Confirm that the video level at TP705 is 1.0 ± 0.2Vp-p.
4. Adjust resistor R718 so that the burst level becomes 200 ± 10mVp-p as shown in Fig. E53.

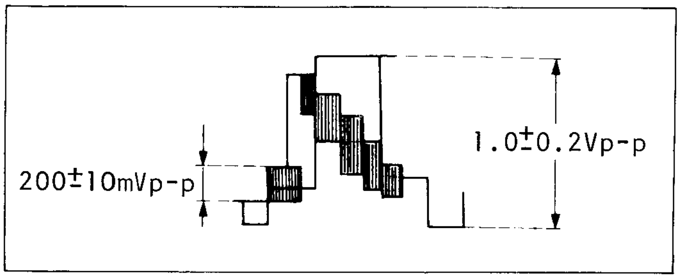


Fig. E53 Video and Burst Levels

TV DEMODULATOR SECTION

MODEL: NV-7200B

Test Equipment

To make adjustments completely following equipments are required.

1. VIF Sweep Generator, set at 39.5MHz
2. SIF Sweep Generator, set at 6.0MHz ± 150kHz
3. CW Oscillator
4. Digital Voltmeter
5. Oscilloscope
6. Bias Jig

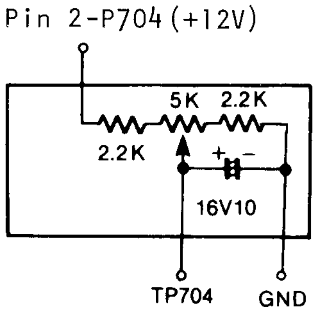
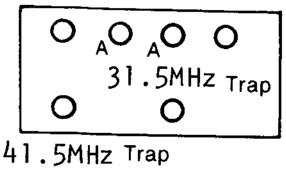


Fig. E54 Bias Jig

A. VIF Sweep Adjustment

1. Connect the H-Out of the VIF Sweep Generator to the H-In of the Scope.
2. Connect the Marker-Out of the VIF Sweep Generator to the Marker-In or Z terminal of the Scope.
3. Set the Channel Selector to the VHF High position and tune the maximum frequency portion.
4. Connect the jumper wire between TP710 (RF AGC) on the tuner and ground.
5. Connect the 100Ω resistor between TP708 and TP709.
6. Connect the scope to TP707.
7. Supply the output of the VIF Sweep Generator to Test Point of the Tuner.
8. Adjust the output of the VIF Sweep Generator so that the level of the sweep output becomes 1.0Vp-p.
9. Release 20dB from the attenuator of the Sweep Generator.
10. Connect the P704 Jig to P704.
11. Connect the Bias Jig to TP704, Pin 2 of P704 Jig and ground.

12. Adjust the IF AGC bias so that the sweep wave becomes 1.0Vp-p.
13. Adjust T702 so that the attenuation of the 33.5MHz trap becomes maximum.
14. Adjust T701 so that the attenuation of the 41.5MHz trap becomes maximum.
15. Adjust the tuner converter coil and the A coil of T701 so that the sweep output waveform becomes as shown in Fig. E56.


A
A
31.5MHz Trap
41.5MHz Trap

A Coil: A Coil adjustment is required, if VIF waveform can not meet as shown in Fig. E56.

Fig.E55 IF Filter T701

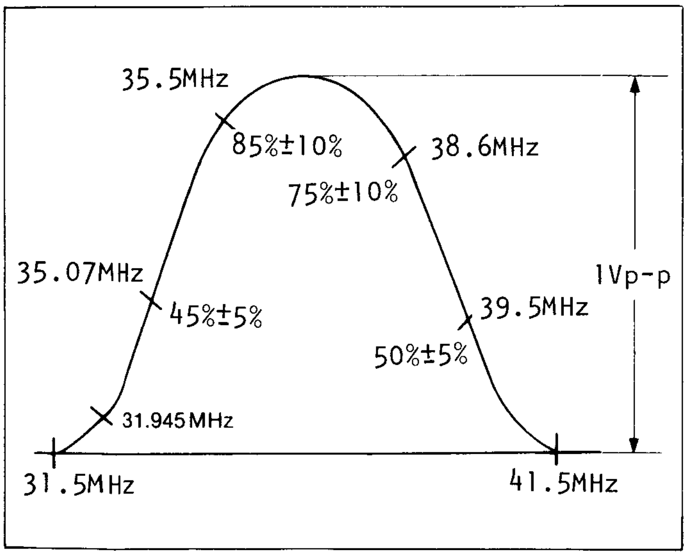

35.5MHz
85%±10%
38.6MHz
75%±10%
35.07MHz
45%±5%
39.5MHz
50%±5%
1Vp-p
31.945MHz
31.5MHz
41.5MHz

Fig.E56 VIF Waveform

B. 39.5MHz Tuning Coil Adjustment

1. Test Equipments connection is the same as in the VIF Sweep Adjustment.
2. Connect the output of the VIF Sweep Generator to TP703.
3. Remove the 100Ω resistor between TP708 and TP709.
4. Turn T703 2 turns clockwise or counterclockwise.
5. Adjust the sweep output so that the sweep wave becomes 0.1Vp-p.
6. Adjust T704 so that the marker position of 39.5MHz becomes maximum as shown in Fig.E57.

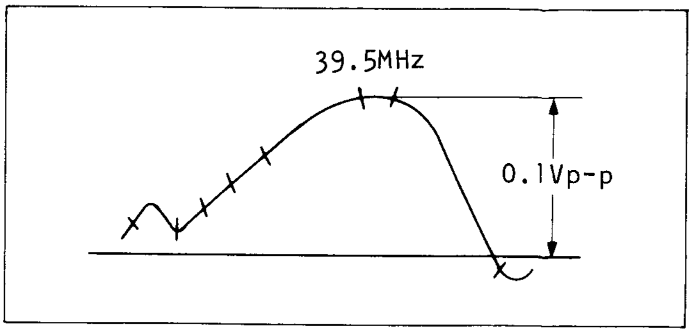

39.5MHz
0.1Vp-p

Fig.E57

7. After this is completed, adjust T703 so that the marker position of the 39.5MHz area becomes as shown in Fig.E58.

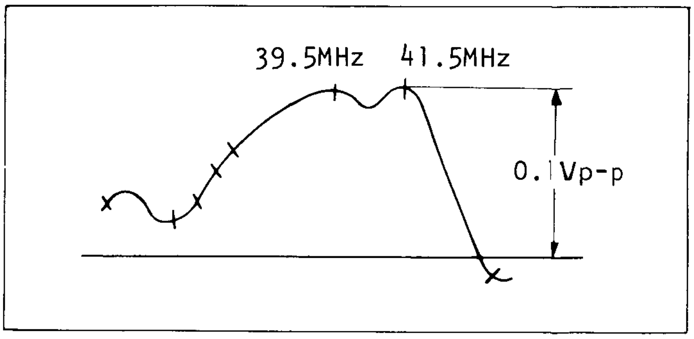

39.5MHz
41.5MHz
0.1Vp-p

Fig.E58

C. SIF Sweep Adjustment

1. Connect the H-Out of the SIF Sweep Generator to the H-In of the scope.
2. Connect the Marker-Out of the SIF Sweep Generator to the Marker-In or Z-terminal of the scope.
3. Connect the Digital Voltmeter to the sweep output and set the sweep output to 3.54mVrms.
4. Connect the output of the SIF Sweep Generator to TP706.
5. Connect the scope to TP701.
6. Adjust T705 for maximum peak-to-peak amplitude of response "S" curve as shown in Fig. E59.

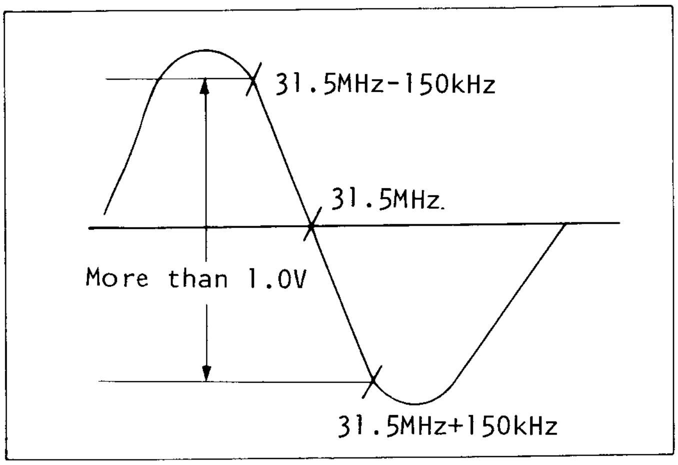


Fig.E59 Response "S" curve

7. Confirm that the level between the 150kHz marker position is more than 1.0V.

D. AFC Adjustment

1. Set the CW oscillator so that the 39.5MHz CW signal becomes 1Vp-p.
2. Supply this signal to the Tuner Test Point.
3. Connect the Digital Voltmeter to the Tuner AFC terminal TP702.
4. Confirm the reading "A" of the Digital Voltmeter is between 6.5V and 7.0V, when the AFC switch is off.
5. Set the AFC switch is "ON".
6. Adjust T703 so that the level at the AFC terminal TP702 becomes "A" ± 0.3V.
7. Change the frequency of the CW oscillator ±100kHz, centered at 39.5MHz and confirm that the difference of the AFC voltage is more than ±2V.

E. Confirmation of Video Level and Adjustment of Burst Level

1. Supply the PAL Standard Colour Bar signal to RF IN terminal and tune this signal.
2. Connect the oscilloscope to the Hot Test Point to TP705 and the Ground Test Point to TP713.
3. Confirm that the video level at TP705 is 1.0 ± 0.2Vp-p.
4. Adjust resistor R718 so that the burst level becomes 240 ± 10mVp-p as shown in Fig.E60.

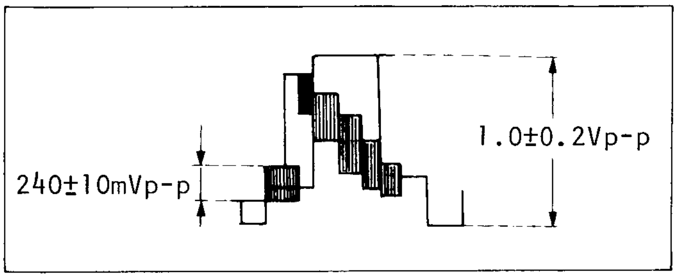


Fig.E60 Video and Burst Levels

ADJUSTMENT OF MODEL ENC-17352 RF CONVERTER

1. Rating

1-1. Channel : CH36 (591.25MHz)
1-2. Supply Voltage : 9±0.5 V
1-3. RF Output Impedance: 75Ω unbal
1-4. Video Input Voltage: 1 ± 0.2Vp-p
1-5. Audio Input Voltage: 0.5 ± 0.1Vrms
1-6. Sub-Carrier Freq. : 6000kHz

2. Adjustment

2-1. Adjust the variable resistor (VR4) in order to get 591.25MHz oscillator frequency.
2-2. Adjust the variable resistor (VR2) in order to get 73 ± 3dB video RF output level.
2-3. Adjust the variable resistor (VR1) in order to get 70 $^{+5}_{-10}$% video modulation ratio using standard colour bar pattern.
2-4. Adjust the trans (T1) in order to get 6.0MHz oscillator frequency.
2-5. Adjust the trans (T2) in order to get sound output level -14 ± 3dB against video output level.
2-6. Adjust the variable resistor (VR3) in order to get 70 ± 10% sound modulation ratio using 1kHz sine wave.

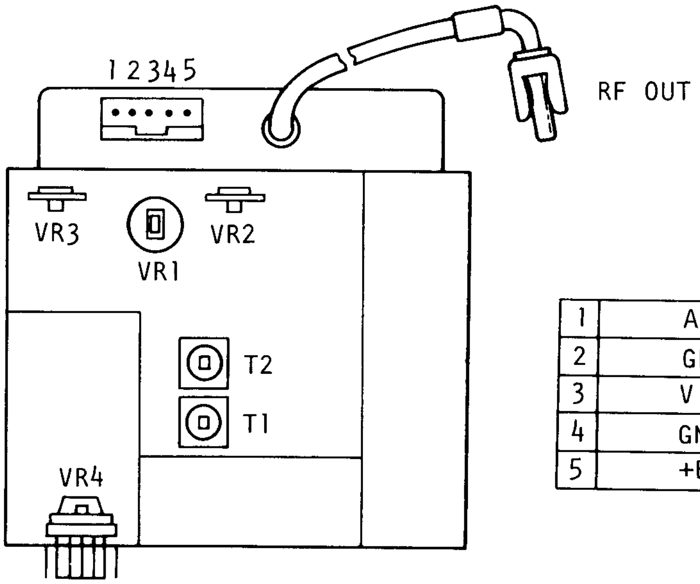
ADJUSTMENT OF MODEL ENC-17351 RF CONVERTER

1. Rating

1-1. Channel : CH36 (591.25MHz)
1-2. Supply Voltage : 9±0.5 V
1-3. RF Output Impedance: 75Ω unbal
1-4. Video Input Voltage: 1 ± 0.2Vp-p
1-5. Audio Input Voltage: 0.5 ± 0.1Vrms
1-6. Sub-Carrier Freq. : 5500kHz

2. Adjustment

2-1. Adjust the variable resistor (VR4) in order to get 591.25MHz oscillator frequency
2-2. Adjust the variable resistor (VR2) in order to get 73 ± 3dB video RF output level.
2-3. Adjust the variable resistor (VR1) in order to get 70 $^{+5}_{-10}$% video modulation ratio using standard colour bar pattern.
2-4. Adjust the trans (T2) in order to get 5.5MHz oscillator frequency.
2-5. Adjust the trans (T1) in order to get sound output level -14 ± 3dB against video output level.
2-6. Adjust the variable resistor (VR3) in order to get 70 ± 10% sound modulation ratio using 1kHz sine wave.

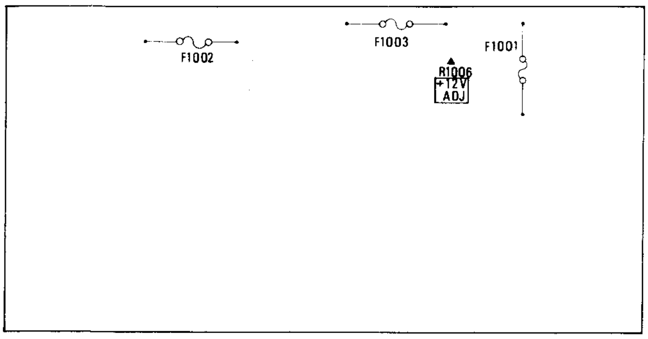


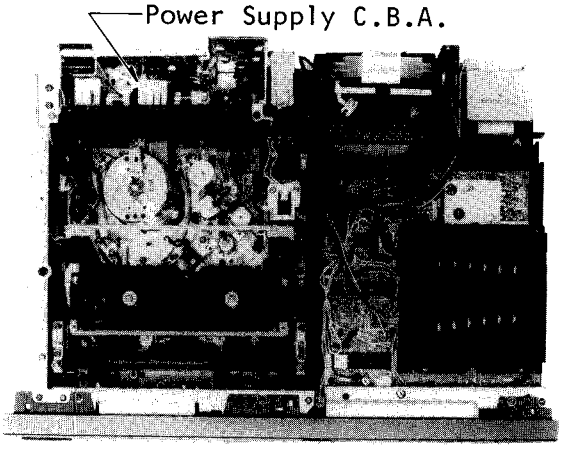
1	AUDIO IN
2	GND
3	VIDEO IN
4	GND
5	+B

LOCATION OF TEST POINTS & CONTROLS

POWER SUPPLY C.B.A.

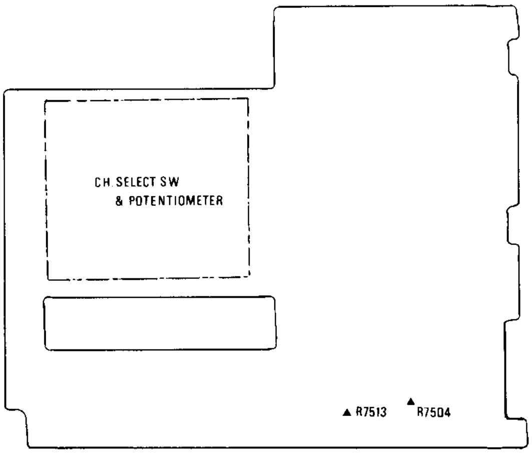
VEP0193A

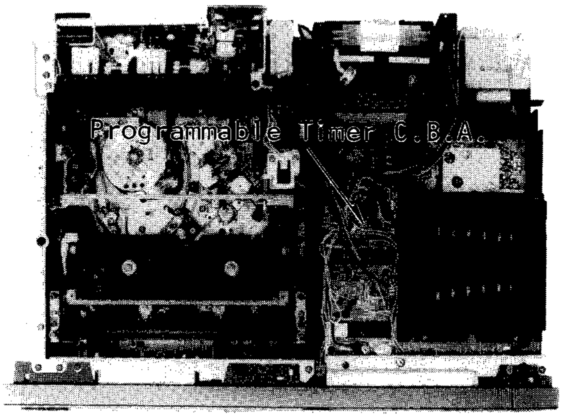

F1002
F1003
F1001
R1006
+12V ADJ


Power Supply C.B.A.

PROGRAMMABLE TIMER C.B.A.

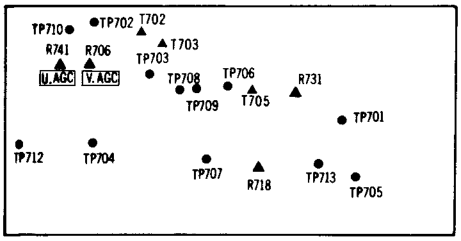
VEP07110A

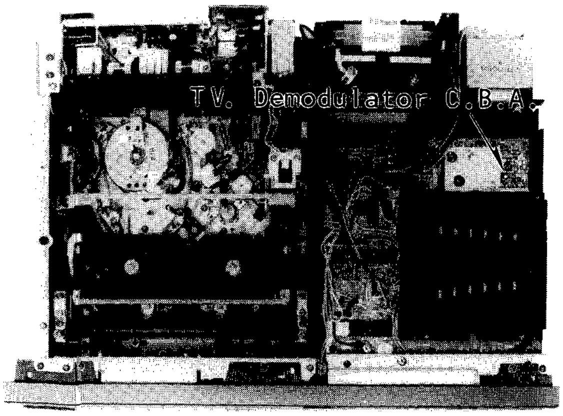

CH SELECT SW
& POTENTIOMETER
R7513
R7504


Programmable Timer C.B.A.

TV DEMODULATOR C.B.A.

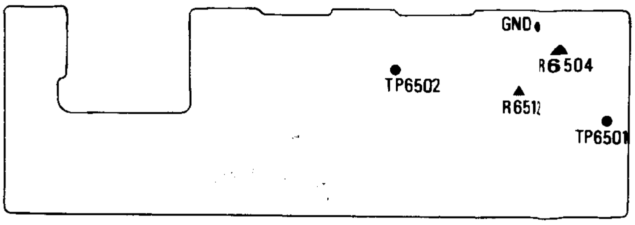
VEP07108A

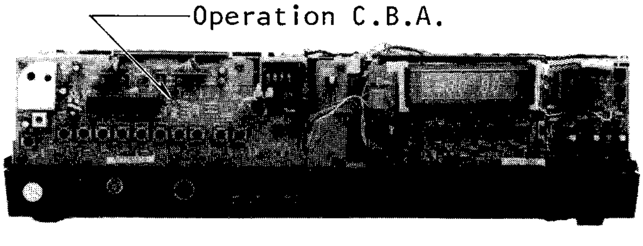

TP710
TP702
T702
T703
R741
R706
TP703
U.AGC
V.AGC
TP708
TP706
R731
TP709
T705
TP701
TP712
TP704
TP707
R718
TP713
TP705


T.V. Demodulator C.B.A.

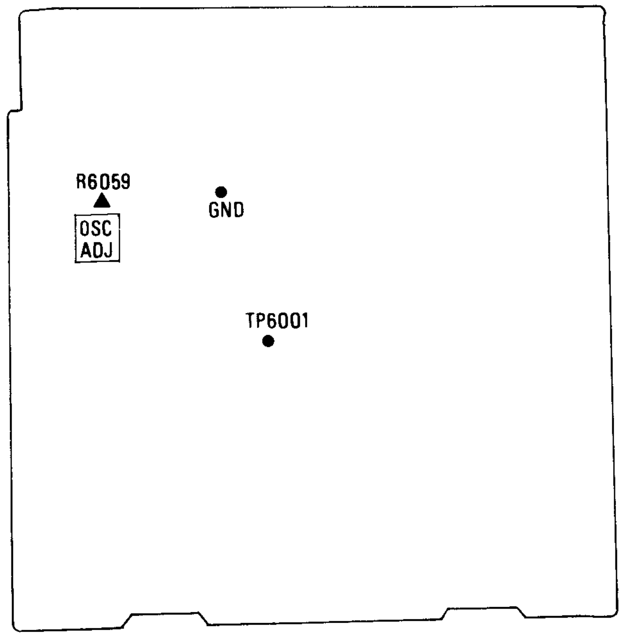
OPERATION C.B.A.

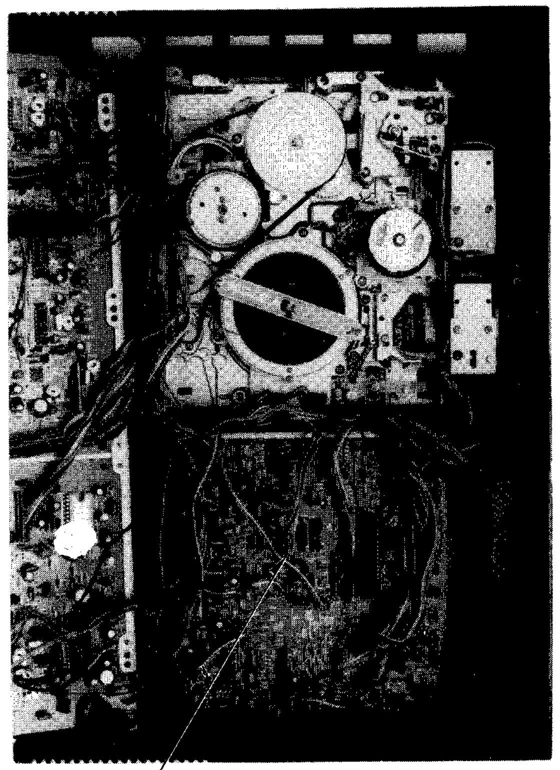
VEP06130A


GND
R6504
TP6502
R6512
TP6501

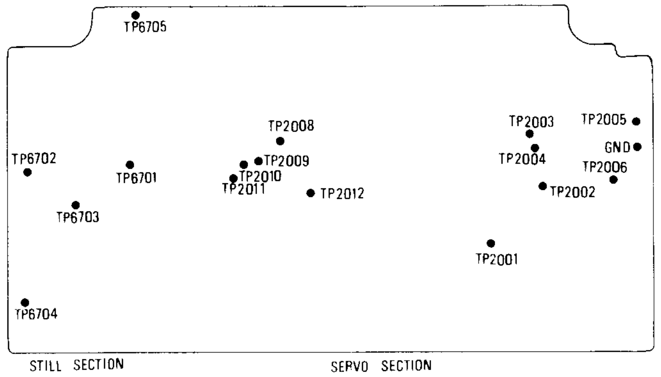

Operation C.B.A.

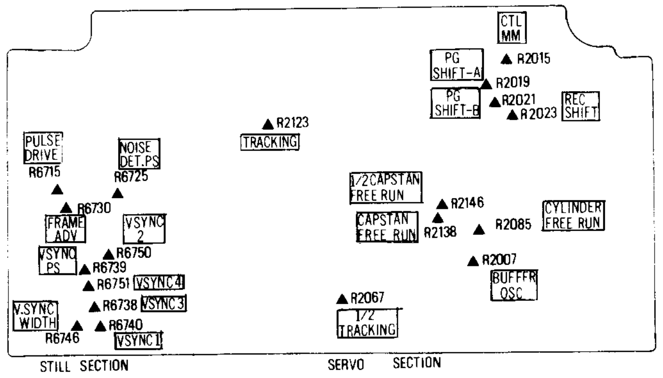
SYSTEM CONTROL C.B.A.	SERVO & STILL C.B.A.	LUMINANCE CHROMINANCE & AUDIO C.B.A.
VEP06129A1	VEP02120A	VEP03114A


R6059
OSC ADJ
GND
TP6001

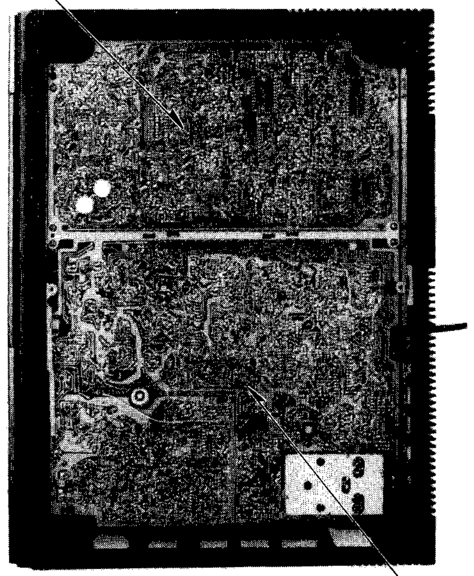


System Control C.B.A.

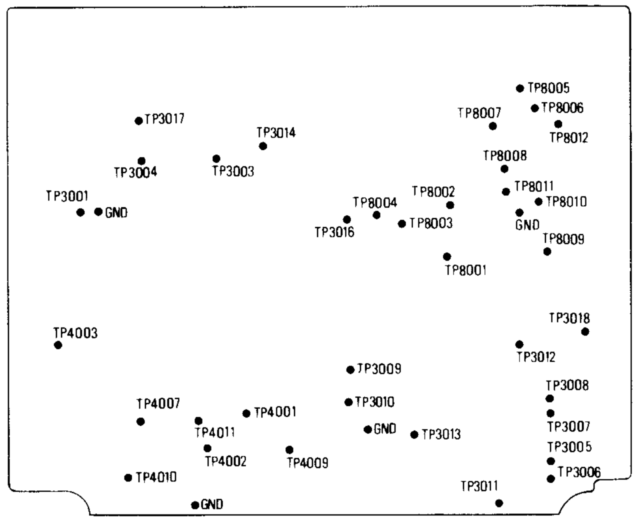

TP6705
TP6702
TP6701
TP6703
TP6704
TP2008
TP2009
TP2010
TP2011
TP2012
TP2003
TP2005
GND
TP2004
TP2006
TP2002
TP2001
STILL SECTION
SERVO SECTION

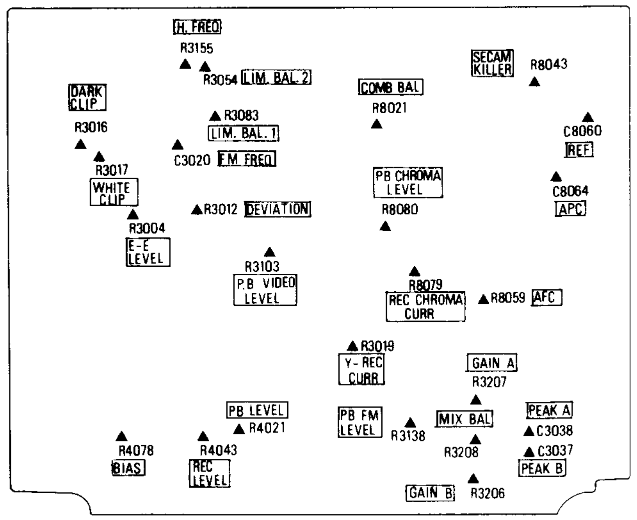

CTL MM
R2015
PG SHIFT-A
R2019
PG SHIFT-B
R2021
R2023
REC SHIFT
R2123
TRACKING
PULSE DRIVE
R6715
NOISE DET.PS
R6725
R6730
FRAME ADV
VSYNC 2
VSYNC PS
R6750
R6739
R6751
VSYNC4
R6738
VSYNC3
V.SYNC WIDTH
R6746
R6740
VSYNC1
1/2CAPSTAN FREE RUN
R2146
CAPSTAN FREE RUN
R2138
R2085
CYLINDER FREE RUN
R2007
BUFFFR OSC
R2067
1/2 TRACKING
STILL SECTION
SERVO SECTION

Servo & Still C.B.A.



Luminance, Chrominance
& Audio C.B.A.


TP8005
TP8006
TP8007
TP8012
TP3017
TP3014
TP3004
TP3003
TP8008
TP3001
GND
TP8011
TP8010
TP8004
TP8002
TP8003
GND
TP3016
TP8009
TP8001
TP3018
TP4003
TP3012
TP3009
TP3008
TP4007
TP4001
TP3010
TP4011
GND
TP3013
TP3007
TP4002
TP4009
TP3005
TP3006
TP4010
TP3011
GND


H. FREQ
R3155
SECAM KILLER
R8043
R3054
LIM. BAL. 2
DARK CLIP
COMB BAL
R8021
R3083
LIM. BAL. 1
R3016
C8060
REF
C3020
FM FREQ
R3017
WHITE CLIP
PB CHROMA LEVEL
C8064
APC
R3012
DEVIATION
R8080
R3004
E-E LEVEL
R3103
P.B VIDEO LEVEL
R8079
REC CHROMA CURR
R8059
AFC
R3019
Y-REC CURR
GAIN A
R3207
PB LEVEL
R4021
PB FM LEVEL
R3138
MIX BAL
PEAK A
C3038
R4078
R4043
R3208
C3037
BIAS
REC LEVEL
PEAK B
GAIN B
R3206

ORDER NO. VRD-8107-886

Service Manual

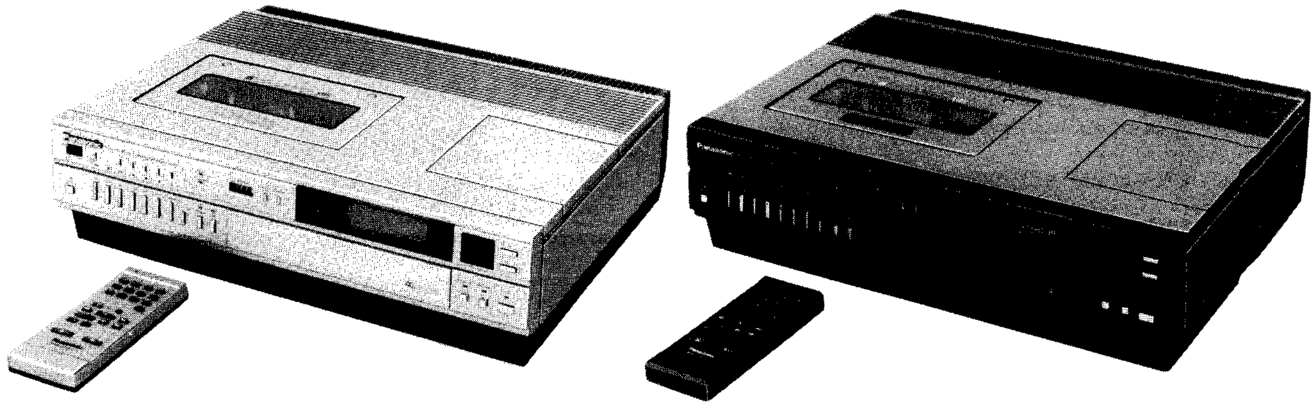
Video Cassette Recorder

Panasonic VHS

Vol. 3

NV-7200-E -EG -B

Block Diagrams
Schematic Diagrams



SPECIFICATIONS

Power Source: NV-7200-E, -EG, 220V, AC, 50/60Hz
NV-7200-B, 240V, AC, 50/60Hz
Power Consumption: Approx. 52 watts
Television System: CCIR: 625 lines, 50 fields
PAL colour signal
Video Recording System: 2 rotary heads, helical scanning system
Luminance: FM azimuth recording
Colour signal: converted subcarrier phase shift recording
Audio Track: 1 track
Tape Format: Tape width 12.7mm high density tape
Tape Speed: 23.39mm/s
Record/Playback Time: 180 min. with NV-E180
240 min. with NV-E240
FF/REW Time: Less than 4.5 min. with NV-E180
Heads Video: 2 rotary heads
Audio/Control: 1 stationary head
Erase: 1 full track erase
1 Audio track erase
Input Level: Video: VIDEO IN connector (BNC)
1.0Vp-p, 75Ω unbalanced
Audio: MIC IN jack
−70dB, 3.9kΩ (Input impedance)
unbalanced (M6)
LINE IN jack
−20dB, 50kΩ unbalanced (RCA)

Output Level: Video: VIDEO OUT connector (BNC)
1.0Vp-p, 75Ω unbalanced
Audio: LINE OUT jack
−6dB, 600Ω (Output impedance)
unbalanced (RCA)
RF Modulated: UHF channel 36 (±4)
75Ω unbalanced
Weight: 11.5kg
Dimensions: 480(W)×136(H)×356(D)mm
Accessories Supplied: 1 pc. Video cassette tape, NV-E120
1 pc. DIN-DIN coaxial cable, VJA0130
1 pc. Dust cover, VFB0008
1 pc. Infrared remote control unit,
VSQ0185 (silver)
VSQ0186 (black)
Optional Accessories: Video cassette tape:
NV-E240 Approx. 344m, 240min.
NV-E180 Approx. 258m, 180min.
NV-E120 Approx. 174m, 120min.
NV-E60 Approx. 88m, 60min.
Video camera, WV-3030E
Microphone

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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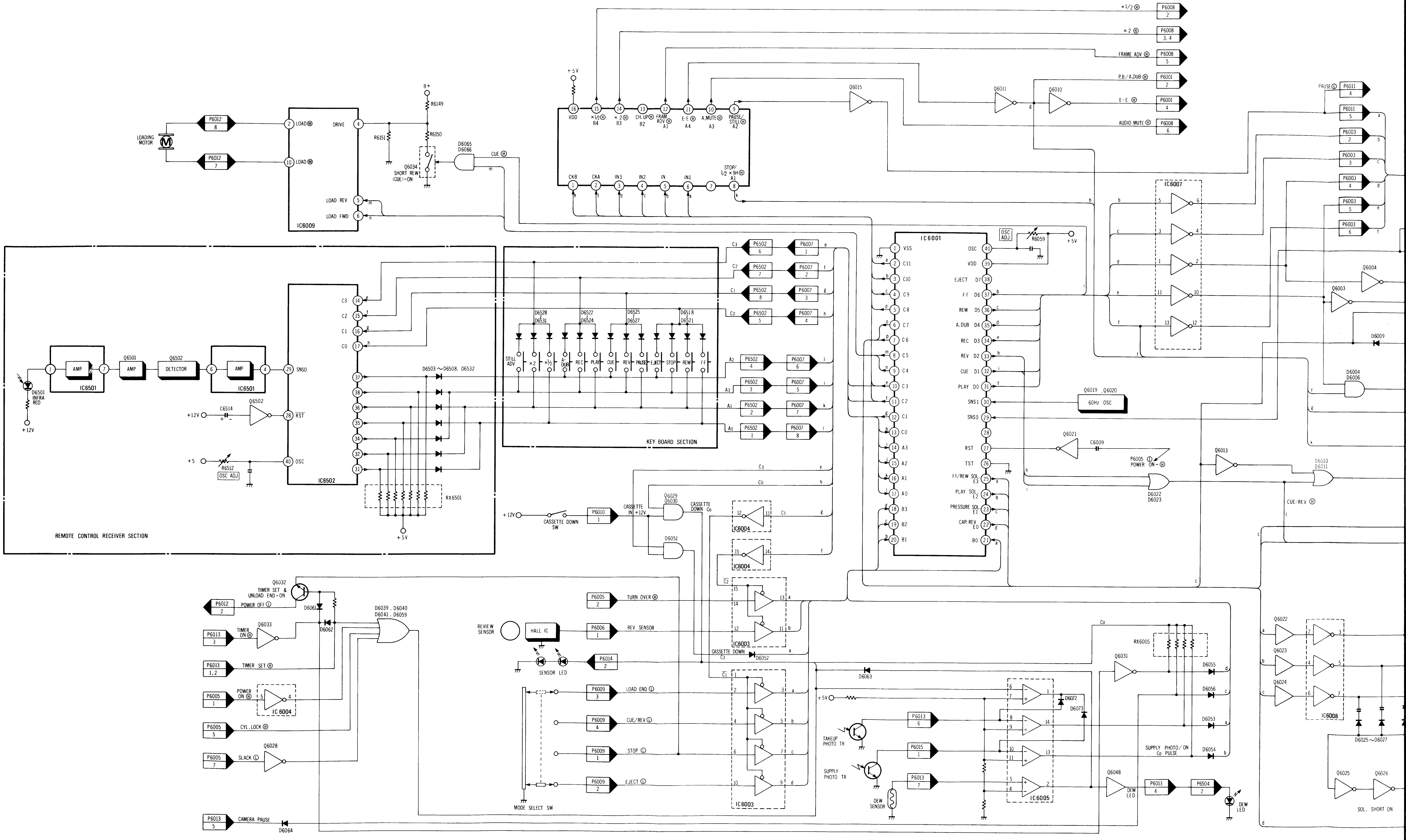
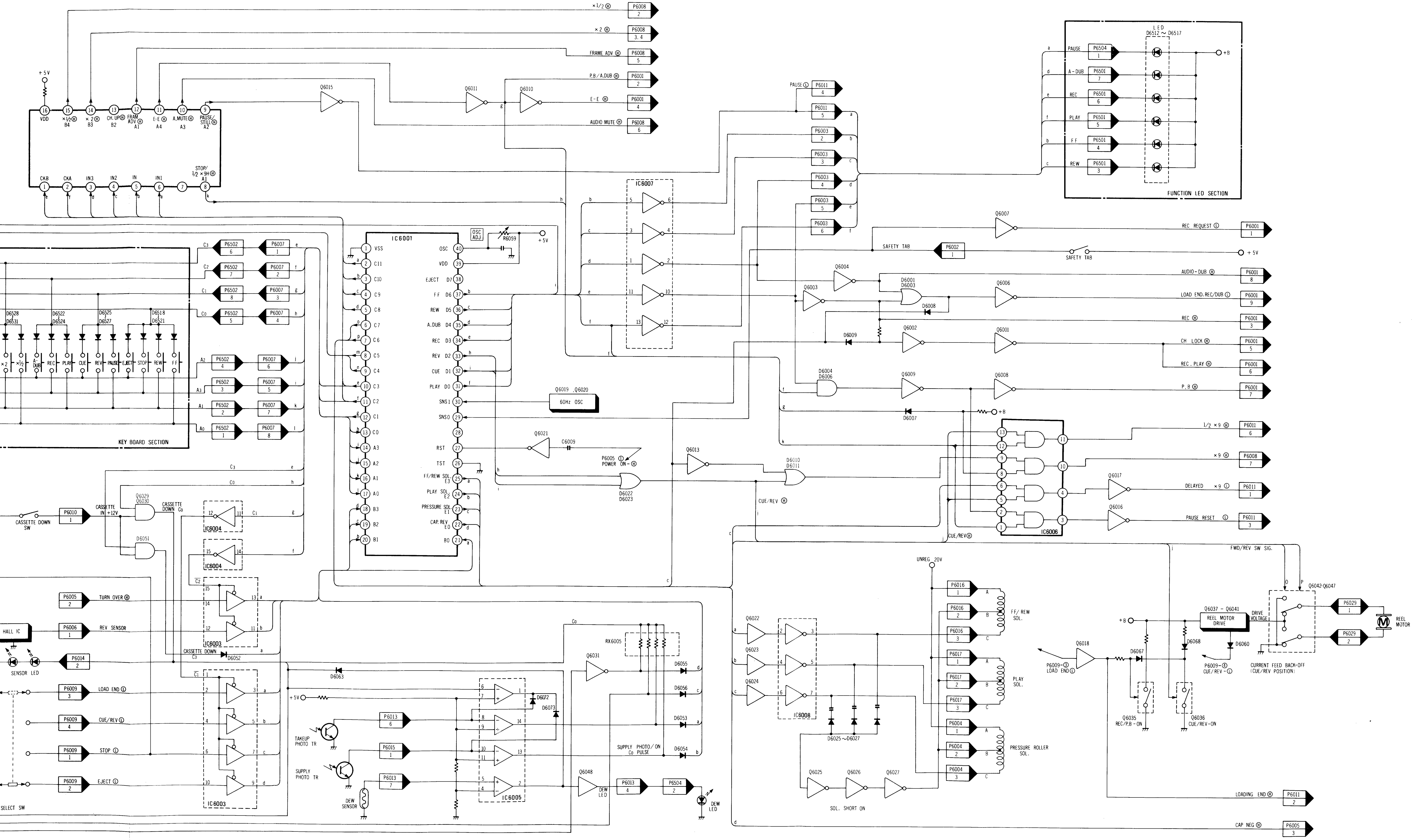
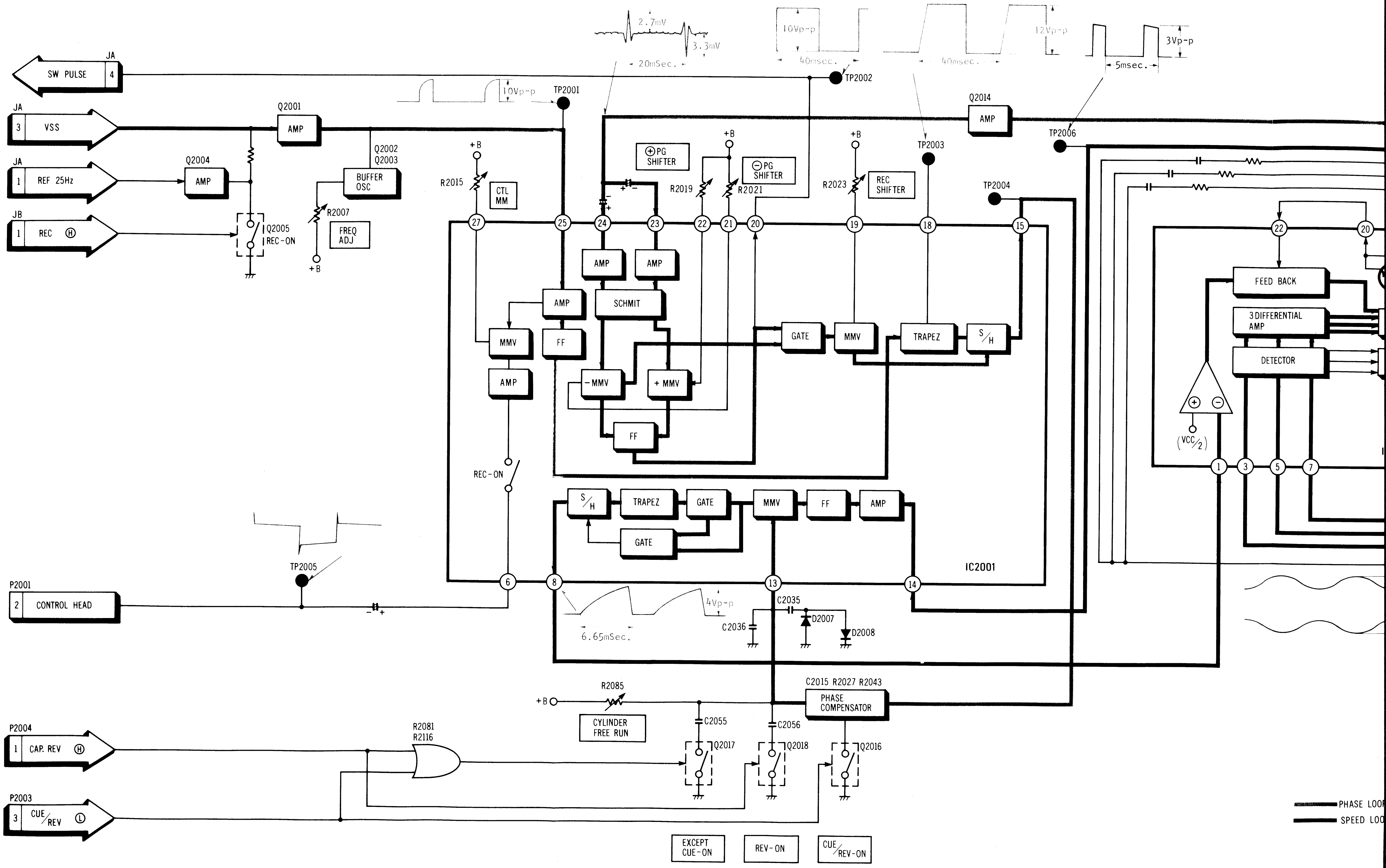
SYSTEM CONTROL BLOCK DIAGRAM


LOADING MOTOR
P6012 8
P6012 7
LOAD Ⓜ
DRIVE
IC6009
LOAD REV
LOAD FWD
B+
R6149
R6150
R6151
Q6034 SHORT REW (CUE)-ON
D6065 D6066
CUE Ⓗ
+5V
VDD
×1/2 Ⓗ B4
×2 Ⓗ B3
CH. UP Ⓗ B2
FRAM ADV Ⓗ A1
E-E Ⓗ A4
A. MUTE Ⓗ A3
PAUSE/STILL Ⓗ A2
CKB
CKA
IN3
IN2
IN
IN1
STOP/ 1/2 × 9H Ⓗ A1
Q6015
Q6011
Q6010
×1/2 Ⓗ P6008 2
×2 Ⓗ P6008 3, 4
FRAME ADV Ⓗ P6008 5
P.B/A.DUB Ⓗ P6001 2
E-E Ⓗ P6001 4
AUDIO MUTE Ⓗ P6008 6
PAUSE Ⓛ P6011 4
P6011 5
P6003 2
P6003 3
P6003 4
P6003 5
P6003 6
IC6007
Q6004
Q6003
D6009
D6004 D6006
IC6001
VSS
OSC
OSC ADJ
R6059
+5V
VDD
EJECT D7
FF D6
REW D5
A.DUB D4
REC D3
REV D2
CUE D1
PLAY D0
SNS1
SNS0
RST
TST
FF/REW SOL E3
PLAY SOL E2
PRESSURE SOL E1
CAP. REV E0
B0
C11 C10 C9 C8 C7 C6 C5 C4 C3 C2 C1 C0
A3 A2 A1 A0
B3 B2 B1
Q6019, Q6020
60Hz OSC
Q6021
C6009
P6005 ① POWER ON-Ⓗ
D6022 D6023
Q6013
D6010 D6011
CUE/REV Ⓗ
P6502 6 P6007 1
P6502 7 P6007 2
P6502 8 P6007 3
P6502 5 P6007 4
P6502 4 P6007 6
P6502 3 P6007 5
P6502 2 P6007 7
P6502 1 P6007 8
D6528 D6531
D6522 D6524
D6525 D6527
D6518 D6521
STILL ADV
×2
×1/2
A. DUB
REC
PLAY
CUE
REV
PAUSE
EJECT
STOP
REW
FF
KEY BOARD SECTION
D6501 INFRA RED
+12V
AMP
IC6501
Q6501
Q6502
DETECTOR
SNSO
C6514
+12V
RST
R6512
OSC ADJ
+5
OSC
IC6502
C3 C2 C1 C0
D6503 ~ D6508, D6532
RX6501
+5V
REMOTE CONTROL RECEIVER SECTION
+12V
CASSETTE DOWN SW
P6010 1
CASSETTE IN +12V
Q6029 Q6030
CASSETTE DOWN Co
IC6004
D6051
Q6032
TIMER SET & UNLOAD END-ON
P6012 2 POWER OFF Ⓛ
D6061
D6062
P6013 3 TIMER ON Ⓗ
Q6033
D6039, D6040 D6041, D6059
P6013 1, 2 TIMER SET Ⓗ
P6005 1 POWER ON Ⓗ
IC 6004
P6005 5 CYL. LOCK Ⓗ
P6005 7 SLACK Ⓛ
Q6028
P6013 5 CAMERA PAUSE
D6064
P6005 2 TURN OVER Ⓗ
REVIEW SENSOR
HALL IC
P6006 1 REV SENSOR
IC6003
CASSETTE DOWN C3
D6052
SENSOR LED
P6014 2
P6009 3 LOAD END Ⓛ
P6009 4 CUE/REV Ⓛ
P6009 1 STOP Ⓛ
P6009 2 EJECT Ⓛ
MODE SELECT SW
D6063
+5V
TAKEUP PHOTO TR
P6013 6
SUPPLY PHOTO TR
P6015 1
P6013 7
DEW SENSOR
D6072
D6073
IC6005
Q6048
DEW LED
P6013 4
P6504 2
DEW LED
Q6031
RX6005
D6055
D6056
D6053
D6054
SUPPLY PHOTO/ON Co PULSE
Q6022
Q6023
Q6024
IC6008
D6025 ~ D6027
Q6025
Q6026
SOL. SHORT ON

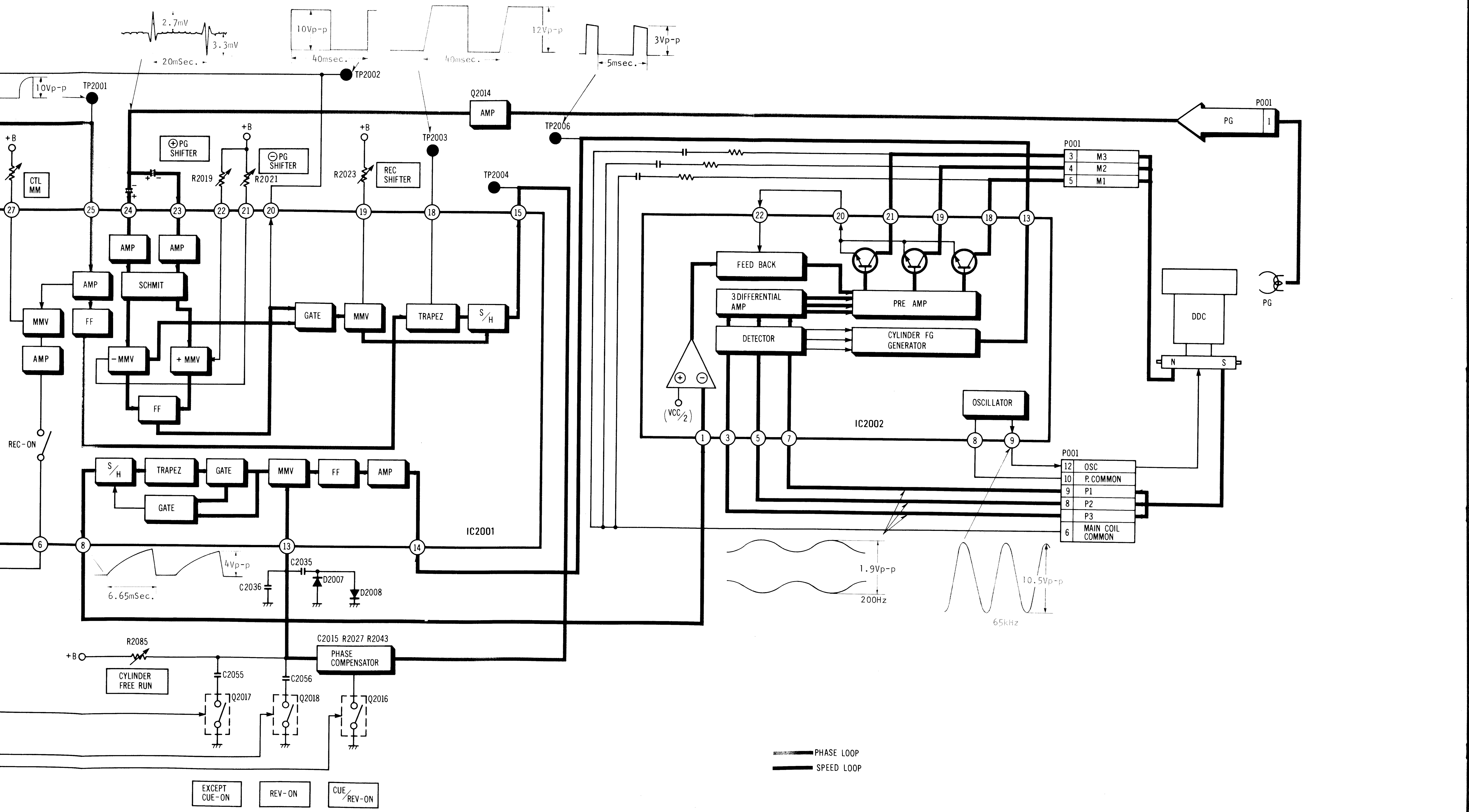


×1/2 Ⓗ
P6008 2
×2 Ⓗ
P6008 3, 4
FRAME ADV Ⓗ
P6008 5
P.B/A.DUB Ⓗ
P6001 2
E-E Ⓗ
P6001 4
AUDIO MUTE Ⓗ
P6008 6
+5V
VDD
×1/2Ⓗ B4
×2Ⓗ B3
CH. UPⒽ B2
FRAM ADV Ⓗ A1
E-E Ⓗ A4
A.MUTEⒽ A3
PAUSE/ STILLⒽ A2
CKB
CKA
IN3
IN2
IN
IN1
STOP/ 1/2×9HⒽ A1
Q6015
Q6011
Q6010
PAUSE Ⓛ
P6011 4
P6011 5
P6003 2
P6003 3
P6003 4
P6003 5
P6003 6
IC6007
LED D6512 ~ D6517
PAUSE P6504 1
A-DUB P6501 7
REC P6501 6
PLAY P6501 5
FF P6501 4
REW P6501 3
+B
FUNCTION LED SECTION
Q6007
REC REQUEST Ⓛ
P6001 1
SAFETY TAB
P6002 1
SAFETY TAB
+5V
Q6004
AUDIO-DUB Ⓗ
P6001 8
Q6003
D6001 D6003
Q6006
LOAD END. REC/DUB Ⓛ
P6001 9
D6008
REC Ⓗ
P6001 3
D6009
Q6002
Q6001
CH LOCK Ⓗ
P6001 5
REC. PLAY Ⓗ
P6001 6
D6004 D6006
Q6009
Q6008
P.B Ⓗ
P6001 7
D6007
+B
1/2 ×9 Ⓗ
P6011 6
×9 Ⓗ
P6008 7
Q6017
DELAYED ×9 Ⓛ
P6011 1
Q6016
PAUSE RESET Ⓛ
P6011 3
IC6006
CUE/REVⒽ
C3 P6502 6 P6007 1
C2 P6502 7 P6007 2
C1 P6502 8 P6007 3
C0 P6502 5 P6007 4
D6528 D6531
D6522 D6524
D6525 D6527
D6518 D6521
×2 ×1/2 A.DUB REC PLAY CUE REV PAUSE EJECT STOP REW FF
A2 P6502 4 P6007 6
A3 P6502 3 P6007 5
A1 P6502 2 P6007 7
A0 P6502 1 P6007 8
KEY BOARD SECTION
IC6001
VSS C11 C10 C9 C8 C7 C6 C5 C4 C3 C2 C1 C0 A3 A2 A1 A0 B3 B2 B1
OSC VDD EJECT D7 FF D6 REW D5 A.DUB D4 REC D3 REV D2 CUE D1 PLAY D0 SNS1 SNS0 RST TST
FF/REW SOL. E3
PLAY SOL. E2
PRESSURE SOL. E1
CAP. REV E0
B0
OSC ADJ
R6059
+5V
Q6019, Q6020
60Hz OSC
Q6021
C6009
P6005 ① POWER ON-Ⓗ
D6022 D6023
Q6013
D6010 D6011
CUE/REV Ⓗ
P6010 1
CASSETTE DOWN SW
CASSETTE IN +12V
Q6029 Q6030
CASSETTE DOWN C0
D6051
IC6004
IC6004
P6005 2 TURN OVER Ⓗ
HALL IC
P6006 1 REV SENSOR
IC6003
CASSETTE DOWN
D6052
P6014 2
SENSOR LED
P6009 3 LOAD END Ⓛ
P6009 4 CUE/REV Ⓛ
P6009 1 STOP Ⓛ
P6009 2 EJECT Ⓛ
SELECT SW
IC6003
D6063
+5V
TAKEUP PHOTO TR
P6013 6
SUPPLY PHOTO TR
P6015 1
DEW SENSOR
P6013 7
D6072
D6073
IC6005
RX6005
Q6031
D6055
D6056
D6053
D6054
SUPPLY PHOTO/ON C0 PULSE
Q6048
DEW LED
P6013 4
P6504 2
DEW LED
UNREG. 20V
Q6022
Q6023
Q6024
IC6008
D6025 ~ D6027
Q6025 Q6026 Q6027
SOL. SHORT ON
P6016 1 2 3
FF/REW SOL.
P6017 1 2 3
PLAY SOL.
P6004 1 2 3
PRESSURE ROLLER SOL.
FWD/REV SW SIG.
Q6042-Q6047
Q6037 - Q6041
REEL MOTOR DRIVE
DRIVE VOLTAGE
+B
Q6018
P6009-③ LOAD END Ⓛ
D6067
D6068
D6060
P6009-④ CUE/REV-Ⓛ
Q6035 REC/P.B-ON
Q6036 CUE/REV-ON
CURRENT FEED BACK-OFF (CUE/REV POSITION)
P6029 1
P6029 2
REEL MOTOR
LOADING END Ⓗ
P6011 2
CAP NEG Ⓗ
P6005 3

CYLINDER SERVO BLOCK DIAGRAM

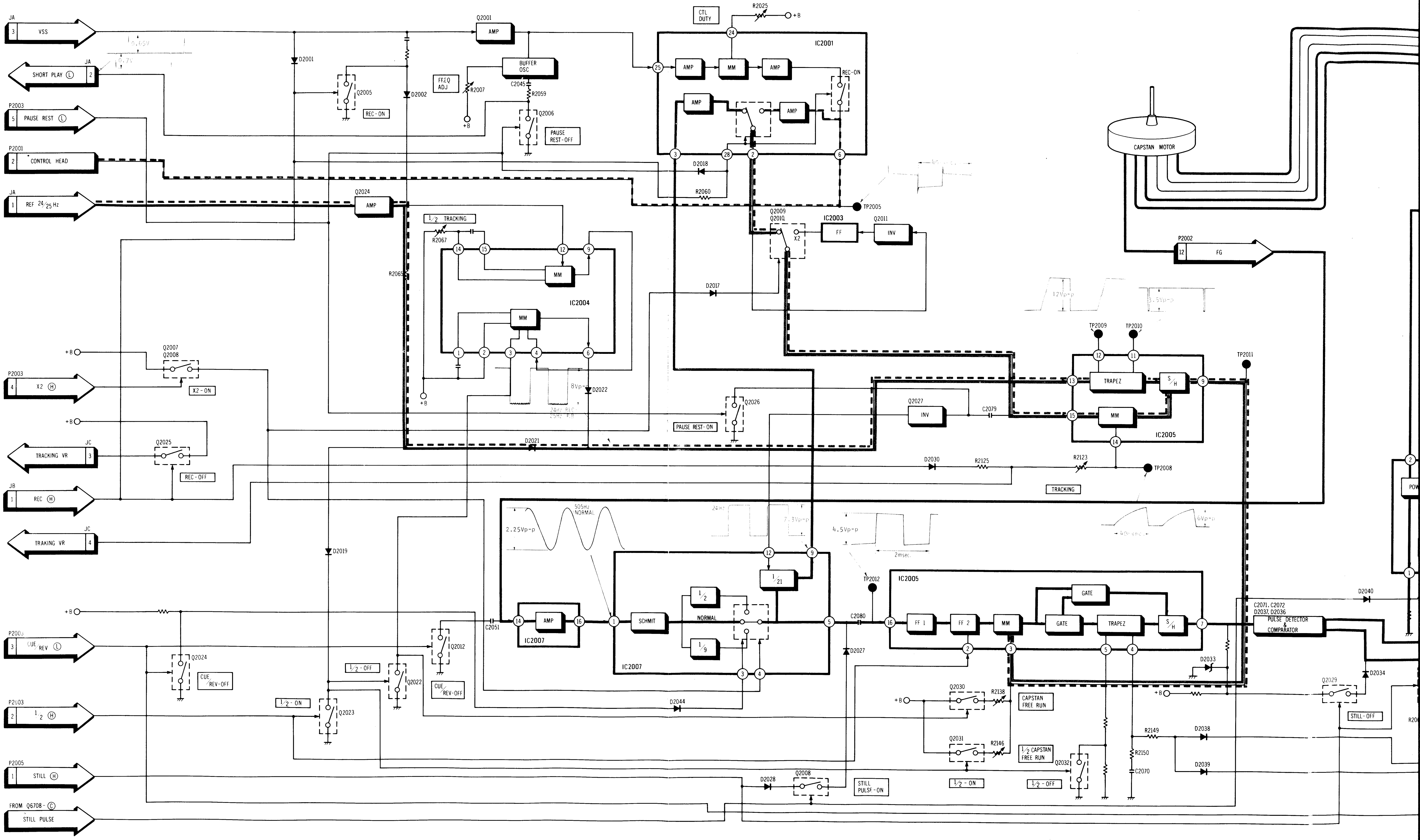


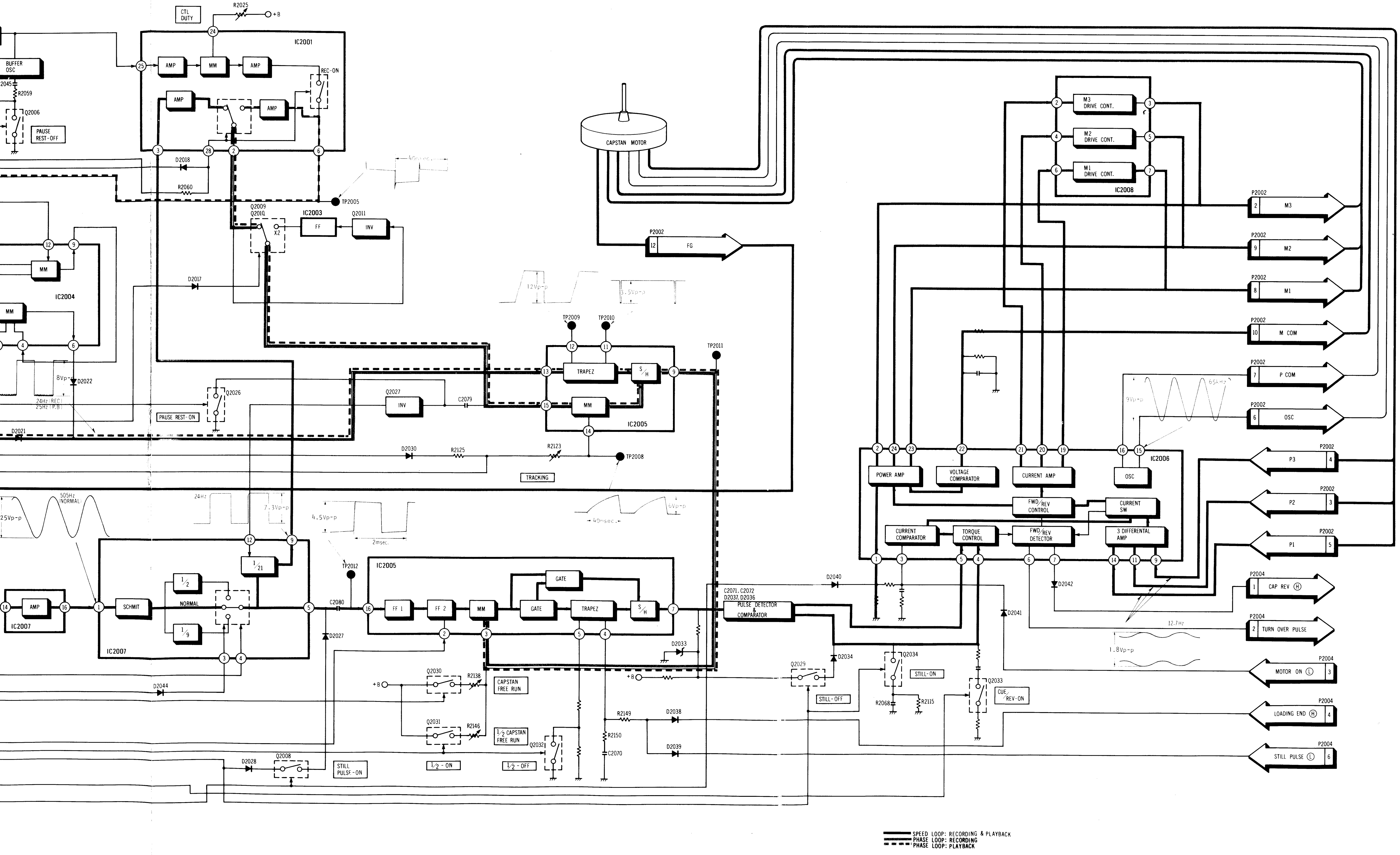
JA
SW PULSE
4
JA
3
VSS
JA
1
REF 25Hz
JB
1
REC Ⓗ
Q2001
AMP
Q2004
AMP
Q2005
REC-ON
Q2002
Q2003
BUFFER OSC
R2007
FREQ ADJ
+B
10Vp-p
TP2001
+B
R2015
CTL MM
2.7mV
3.3mV
20mSec.
⊕PG SHIFTER
+B
R2019
R2021
⊖PG SHIFTER
10Vp-p
40msec.
TP2002
+B
R2023
REC SHIFTER
12Vp-p
40msec.
TP2003
Q2014
AMP
TP2004
TP2006
3Vp-p
5msec.
27
25
24
23
22
21
20
19
18
15
AMP
AMP
AMP
SCHMIT
MMV
FF
GATE
MMV
TRAPEZ
S/H
AMP
−MMV
+ MMV
FF
REC-ON
S/H
TRAPEZ
GATE
MMV
FF
AMP
GATE
IC2001
P2001
2
CONTROL HEAD
TP2005
6
8
13
14
4Vp-p
6.65mSec.
C2035
C2036
D2007
D2008
22
20
FEED BACK
3 DIFFERENTIAL AMP
DETECTOR
(VCC/2)
1
3
5
7
+B
R2085
CYLINDER FREE RUN
C2015 R2027 R2043
PHASE COMPENSATOR
C2055
C2056
Q2017
Q2018
Q2016
P2004
1
CAP. REV Ⓗ
R2081
R2116
P2003
3
CUE/REV Ⓛ
EXCEPT CUE-ON
REV-ON
CUE/REV-ON
PHASE LOOP
SPEED LOOP



2.7mV
3.3mV
20mSec.
10Vp-p
40msec.
TP2002
12Vp-p
40msec.
3Vp-p
5msec.
10Vp-p
TP2001
Q2014
AMP
TP2006
P001
PG
1
+B
⊕PG SHIFTER
+B
⊖PG SHIFTER
+B
TP2003
REC SHIFTER
R2019
R2021
R2023
TP2004
CTL MM
27
25
24
23
22
21
20
19
18
15
AMP
AMP
AMP
SCHMIT
GATE
MMV
TRAPEZ
S/H
MMV
FF
AMP
-MMV
+MMV
FF
REC-ON
S/H
TRAPEZ
GATE
MMV
FF
AMP
GATE
IC2001
6
8
13
14
4Vp-p
6.65mSec.
C2035
C2036
D2007
D2008
C2015 R2027 R2043
PHASE COMPENSATOR
+B
R2085
CYLINDER FREE RUN
C2055
C2056
Q2017
Q2018
Q2016
EXCEPT CUE-ON
REV-ON
CUE/REV-ON
P001
3 M3
4 M2
5 M1
22
20
21
19
18
13
FEED BACK
3 DIFFERENTIAL AMP
PRE AMP
DETECTOR
CYLINDER FG GENERATOR
(VCC/2)
OSCILLATOR
IC2002
1
3
5
7
8
9
P001
12 OSC
10 P.COMMON
9 P1
8 P2
P3
6 MAIN COIL COMMON
DDC
N
S
PG
1.9Vp-p
200Hz
10.5Vp-p
65kHz
PHASE LOOP
SPEED LOOP

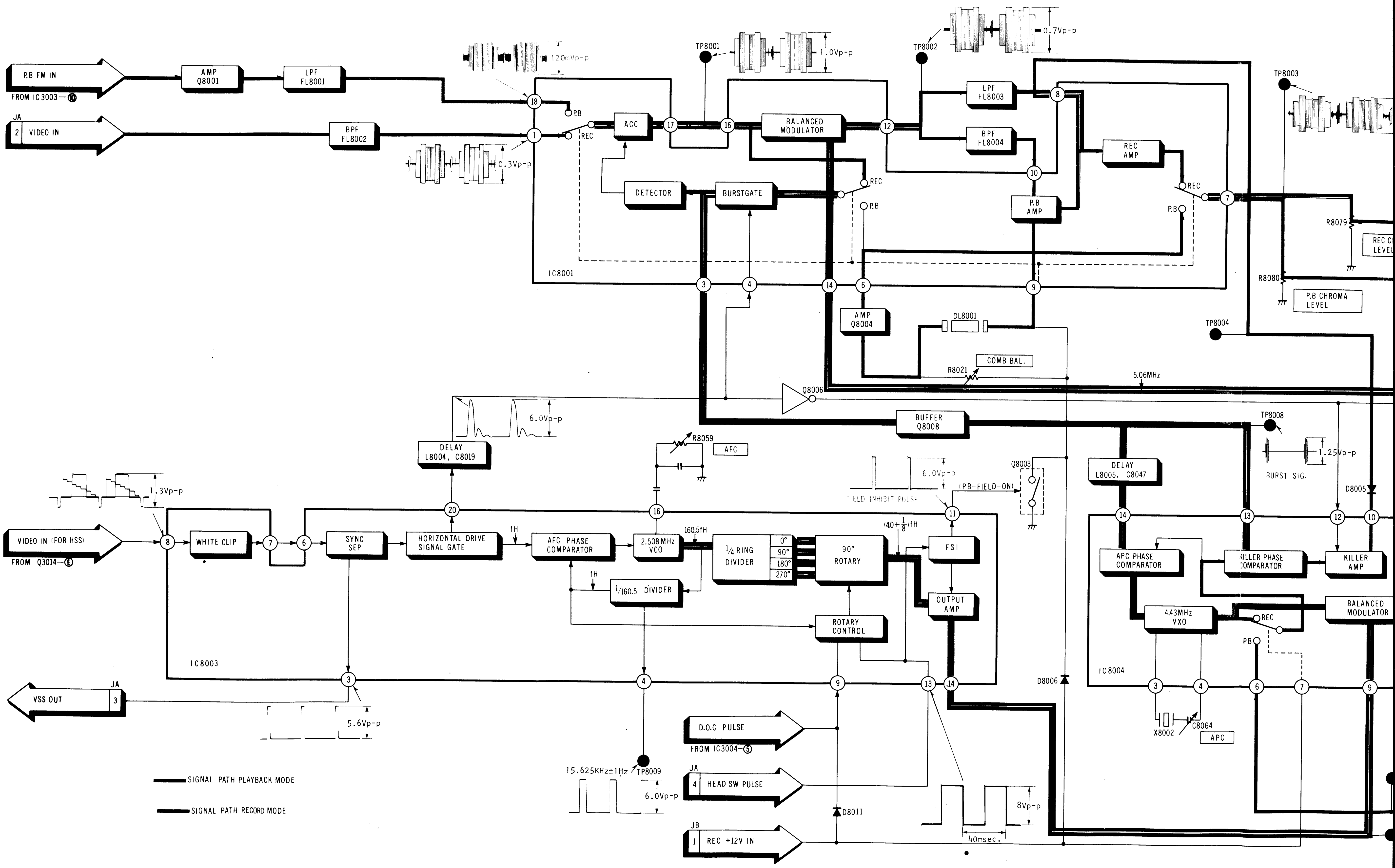
CAPSTAN SERVO BLOCK DIAGRAM


JA 3 VSS
JA 2 SHORT PLAY Ⓛ
P2003 5 PAUSE REST Ⓛ
P2001 2 CONTROL HEAD
JA 1 REF 24/25 Hz
P2003 4 X2 Ⓗ
JC 3 TRACKING VR
JB 1 REC Ⓗ
JC 4 TRAKING VR
P2003 3 CUE/REV Ⓛ
P2003 2 1/2 Ⓗ
P2005 1 STILL Ⓗ
FROM Q6708-Ⓒ STILL PULSE
Q2001 AMP
D2001
D2002
Q2005
REC-ON
BUFFER OSC
FREQ ADJ
R2007
C2045
R2059
Q2006
PAUSE REST-OFF
+B
0.65V
0.7V
CTL DUTY
R2025
IC2001
AMP
MM
AMP
REC-ON
AMP
AMP
D2018
R2060
TP2005
Q2009
Q2010
X2
IC2003
FF
Q2011
INV
Q2024
AMP
1/2 TRACKING
R2067
R2065
MM
IC2004
MM
8Vp-p
D2022
24Hz REC
25Hz PB
D2017
D2021
Q2007
Q2008
X2-ON
Q2025
REC-OFF
Q2026
PAUSE REST-ON
Q2027
INV
C2079
CAPSTAN MOTOR
P2002 12 FG
12Vp-p
3.5Vp-p
TP2009
TP2010
TP2011
TRAPEZ
S/H
MM
IC2005
D2030
R2125
R2123
TP2008
TRACKING
POW
505Hz NORMAL
2.25Vp-p
24Hz
7.3Vp-p
4.5Vp-p
2msec
6Vp-p
40msec
D2019
IC2007
AMP
C2051
SCHMIT
1/2
NORMAL
1/9
1/21
C2080
TP2012
D2027
IC2005
FF 1
FF 2
MM
GATE
GATE
TRAPEZ
S/H
C2071, C2072
D2037, D2036
PULSE DETECTOR & COMPARATOR
D2040
D2033
D2034
Q2029
STILL-OFF
Q2024
CUE/REV-OFF
Q2012
1/2-OFF
Q2022
CUE/REV-OFF
1/2-ON
Q2023
D2044
Q2030
R2138
CAPSTAN FREE RUN
Q2031
R2146
1/2 CAPSTAN FREE RUN
Q2032
1/2-ON
1/2-OFF
R2149
R2150
C2070
D2038
D2039
D2028
Q2008
STILL PULSE-ON



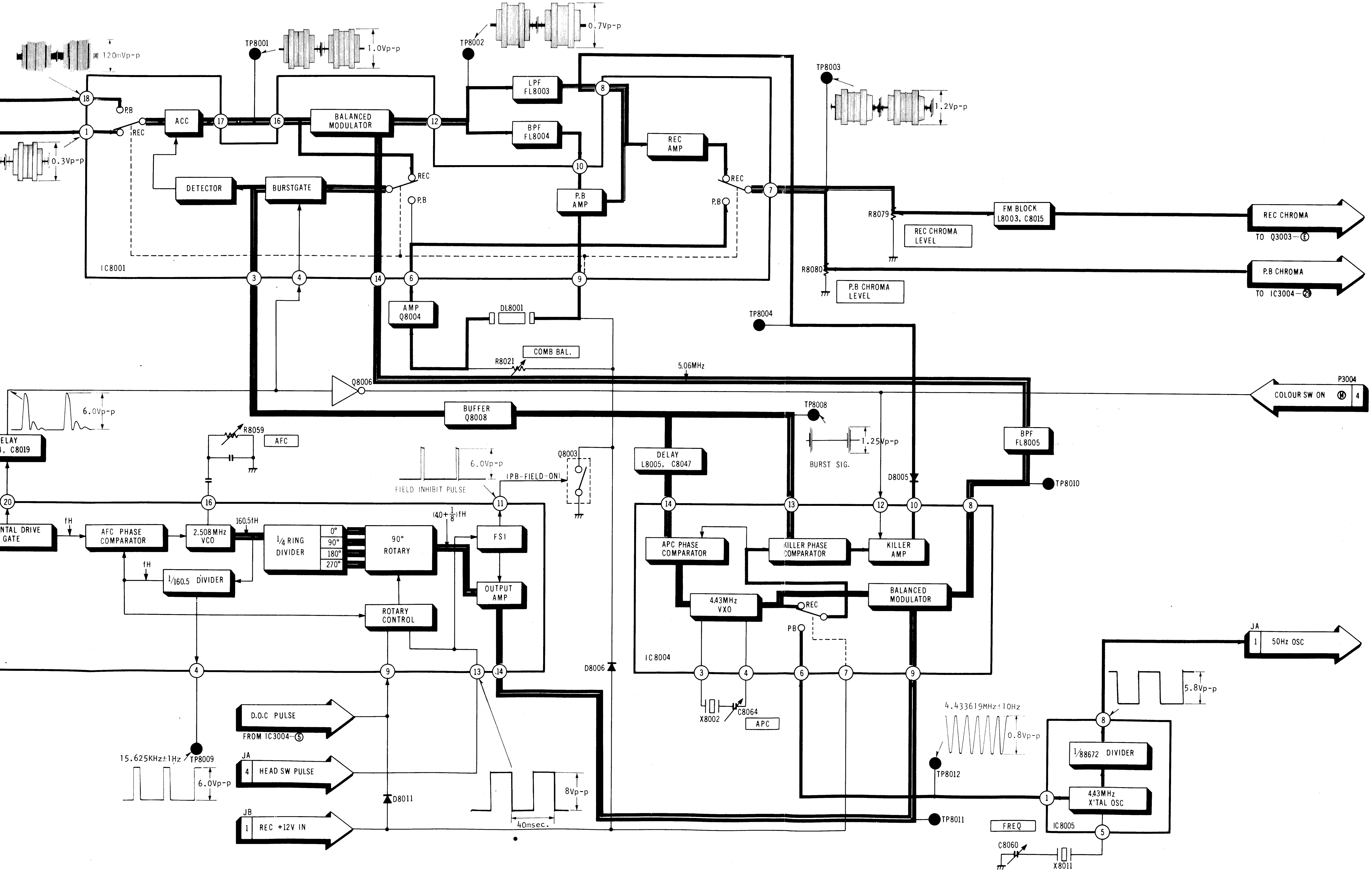
CTL DUTY
R2025
+B
IC2001
AMP
MM
REC-ON
BUFFER OSC
R2045
R2059
Q2006
PAUSE REST-OFF
D2018
R2060
TP2005
40msec.
Q2009
Q2010
X2
IC2003
FF
Q2011
INV
IC2004
D2017
8Vp-p
D2022
24Hz (REC)
25Hz (P.B)
D2021
Q2026
PAUSE REST-ON
Q2027
C2079
12Vp-p
3.5Vp-p
TP2009
TP2010
TP2011
TRAPEZ
S/H
IC2005
D2030
R2125
R2123
TP2008
TRACKING
CAPSTAN MOTOR
P2002
FG
505Hz (NORMAL)
25Vp-p
24Hz
7.3Vp-p
4.5Vp-p
2msec.
6Vp-p
40msec.
1/21
SCHMIT
NORMAL
1/2
1/9
IC2007
TP2012
C2080
D2027
FF 1
FF 2
GATE
C2071, C2072
D2037, D2036
PULSE DETECTOR & COMPARATOR
D2033
D2040
D2034
D2044
Q2030
R2138
CAPSTAN FREE RUN
Q2031
R2146
1/2 CAPSTAN FREE RUN
1/2 - ON
1/2 - OFF
Q2032
R2149
R2150
C2070
D2038
D2039
D2028
Q2008
STILL PULSE-ON
Q2029
STILL-OFF
Q2034
STILL-ON
R2068
R2115
Q2033
CUE/REV-ON
D2041
D2042
M3 DRIVE CONT.
M2 DRIVE CONT.
M1 DRIVE CONT.
IC2008
M3
M2
M1
M COM
P COM
OSC
65kHz
9Vp-p
IC2006
POWER AMP
VOLTAGE COMPARATOR
CURRENT AMP
FWD/REV CONTROL
CURRENT SW
CURRENT COMPARATOR
TORQUE CONTROL
FWD/REV DETECTOR
3 DIFFERENTAL AMP
P3
P2
P1
P2004
CAP REV Ⓗ
TURN OVER PULSE
12.7Hz
1.8Vp-p
MOTOR ON Ⓛ
LOADING END Ⓗ
STILL PULSE Ⓛ
SPEED LOOP: RECORDING & PLAYBACK
PHASE LOOP: RECORDING
PHASE LOOP: PLAYBACK

CHROMINANCE PROCESS BLOCK DIAGRAM



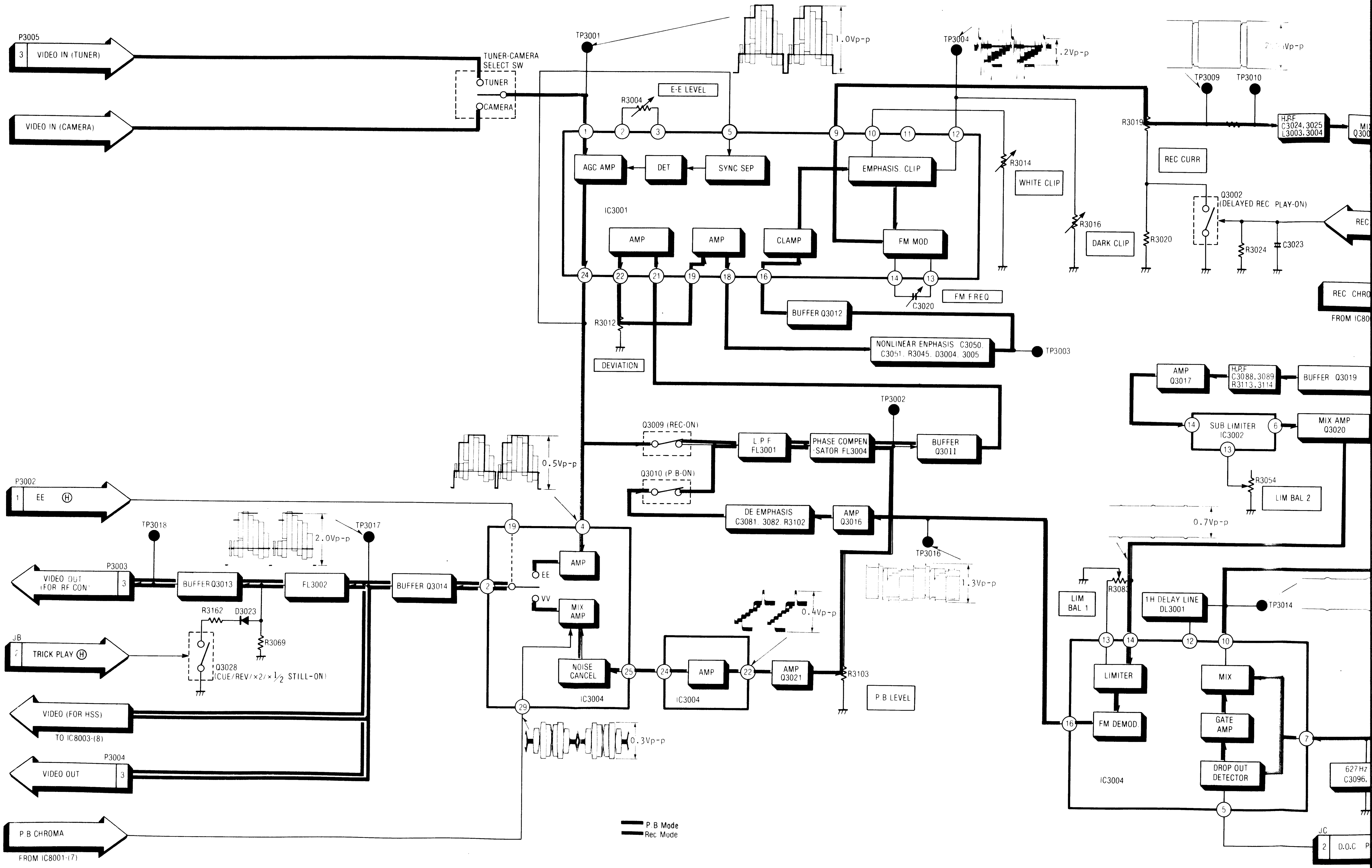
P.B FM IN
FROM IC3003—⑩
AMP Q8001
LPF FL8001
120mVp-p
JA
2 VIDEO IN
BPF FL8002
0.3Vp-p
18
1
P.B
REC
ACC
17
16
TP8001
1.0Vp-p
BALANCED MODULATOR
12
TP8002
0.7Vp-p
LPF FL8003
BPF FL8004
8
10
REC AMP
P.B AMP
REC
P.B
7
TP8003
R8079
REC C LEVEL
R8080
P.B CHROMA LEVEL
DETECTOR
BURSTGATE
REC
P.B
IC8001
3
4
14
6
9
AMP Q8004
DL8001
COMB BAL.
R8021
TP8004
5.06MHz
Q8006
BUFFER Q8008
TP8008
1.25Vp-p
BURST SIG.
D8005
DELAY L8004, C8019
6.0Vp-p
R8059
AFC
1.3Vp-p
6.0Vp-p
FIELD INHIBIT PULSE
(PB-FIELD-ON)
Q8003
DELAY L8005, C8047
VIDEO IN (FOR HSS)
FROM Q3014—Ⓔ
8
WHITE CLIP
7
6
SYNC SEP
20
HORIZONTAL DRIVE SIGNAL GATE
fH
AFC PHASE COMPARATOR
16
2.508MHz VCO
160.5fH
1/4 RING DIVIDER
0°
90°
180°
270°
90° ROTARY
(40+1/8)fH
11
FSI
OUTPUT AMP
fH
1/160.5 DIVIDER
ROTARY CONTROL
14
13
12
10
APC PHASE COMPARATOR
KILLER PHASE COMPARATOR
KILLER AMP
4.43MHz VXO
REC
PB
BALANCED MODULATOR
IC8003
IC8004
3
4
9
13
14
D8006
3
4
6
7
9
X8002
C8064
APC
JA
VSS OUT
3
5.6Vp-p
15.625KHz±1Hz
TP8009
6.0Vp-p
D.O.C PULSE
FROM IC3004—⑤
JA
4 HEAD SW PULSE
D8011
JB
1 REC +12V IN
8Vp-p
40msec.
SIGNAL PATH PLAYBACK MODE
SIGNAL PATH RECORD MODE

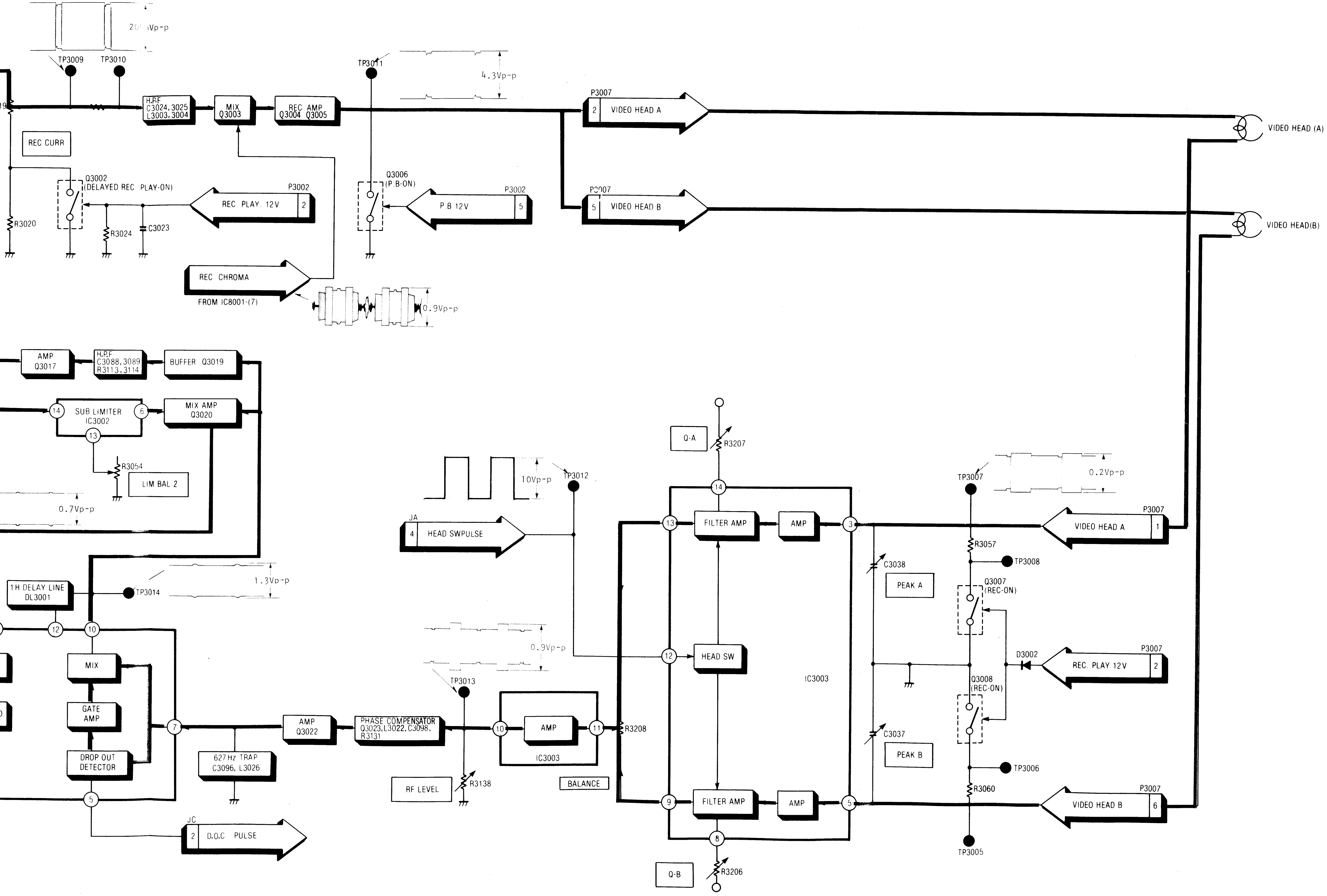
DIAGRAM



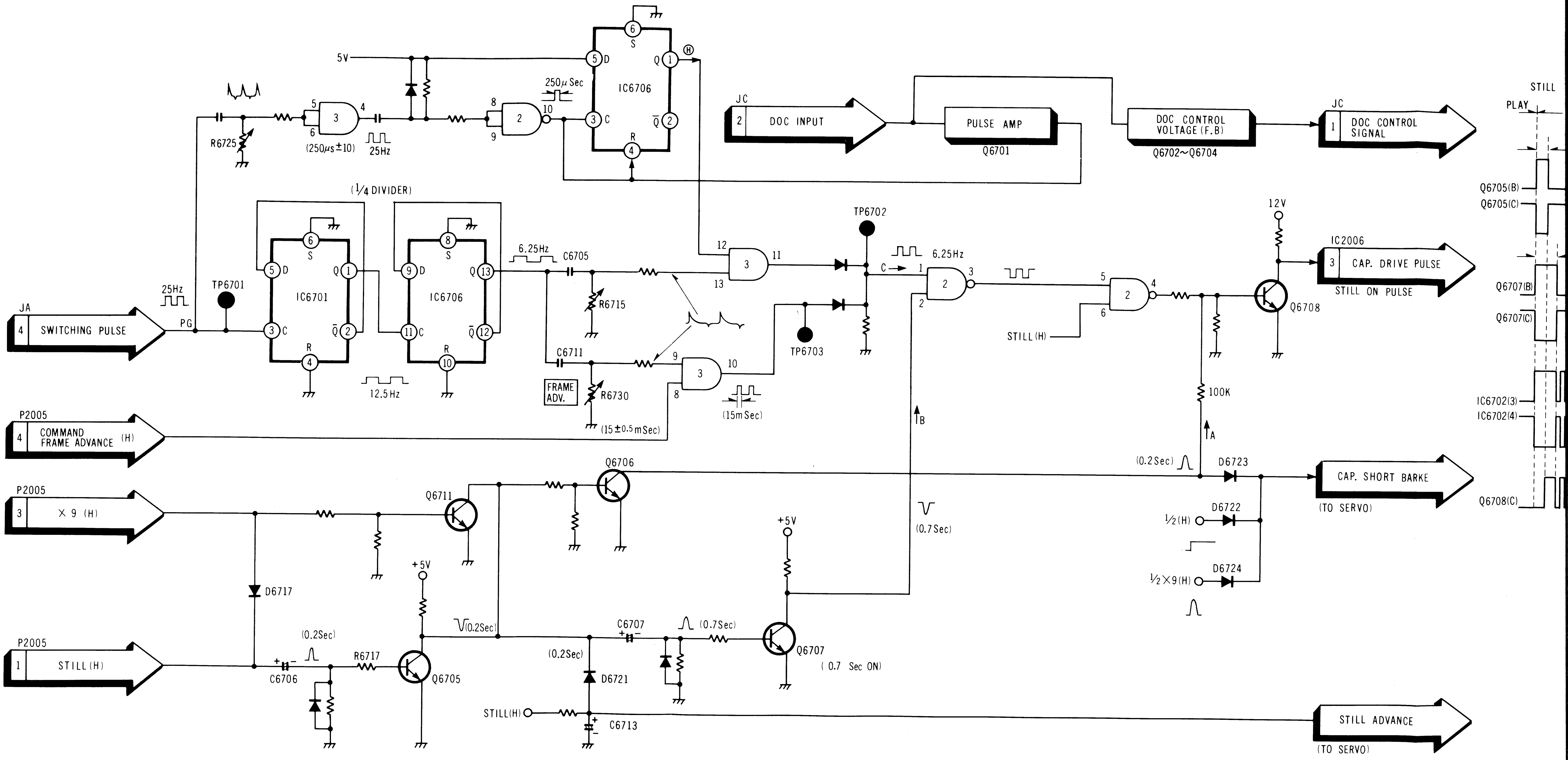
120mVp-p
0.3Vp-p
TP8001
1.0Vp-p
TP8002
0.7Vp-p
TP8003
1.2Vp-p
18
P.B
1
REC
ACC
17
16
BALANCED MODULATOR
12
LPF FL8003
BPF FL8004
8
10
REC AMP
REC
P.B AMP
P.B
7
DETECTOR
BURSTGATE
REC
P.B
IC8001
3
4
14
6
9
AMP Q8004
DL8001
R8021
COMB BAL.
R8079
REC CHROMA LEVEL
R8080
P.B CHROMA LEVEL
FM BLOCK L8003, C8015
REC CHROMA
TO Q3003-Ⓔ
P.B CHROMA
TO IC3004-㉙
TP8004
5.06MHz
Q8006
P3004
COLOUR SW ON
4
6.0Vp-p
ELAY
, C8019
BUFFER Q8008
TP8008
1.25Vp-p
BURST SIG.
BPF FL8005
TP8010
D8005
R8059
AFC
6.0Vp-p
FIELD INHIBIT PULSE
(PB-FIELD-ON)
Q8003
DELAY L8005, C8047
20
NTAL DRIVE GATE
fH
AFC PHASE COMPARATOR
2.508MHz VCO
160.5fH
1/4 RING DIVIDER
0°
90°
180°
270°
90° ROTARY
(40+1/8)fH
FSI
11
OUTPUT AMP
fH
1/160.5 DIVIDER
ROTARY CONTROL
14
13
12
10
8
APC PHASE COMPARATOR
KILLER PHASE COMPARATOR
KILLER AMP
4.43MHz VXO
REC
PB
BALANCED MODULATOR
IC8004
3
4
6
7
9
X8002
C8064
APC
4
9
13
14
D8006
D.O.C PULSE
FROM IC3004-⑤
JA
4
HEAD SW PULSE
JB
1
REC +12V IN
D8011
15.625KHz±1Hz
TP8009
6.0Vp-p
8Vp-p
40msec.
JA
1
50Hz OSC
5.8Vp-p
4.433619MHz±10Hz
0.8Vp-p
TP8012
TP8011
8
1/88672 DIVIDER
4.43MHz X'TAL OSC
1
5
IC8005
FREQ
C8060
X8011

LUMINANCE PROCESS BLOCK DIAGRAM


P3005
3 VIDEO IN (TUNER)
VIDEO IN (CAMERA)
TUNER-CAMERA SELECT SW
TUNER
CAMERA
TP3001
1.0Vp-p
R3004
E-E LEVEL
AGC AMP
DET
SYNC SEP
IC3001
AMP
AMP
CLAMP
EMPHASIS. CLIP
FM MOD
TP3004
1.2Vp-p
R3014
WHITE CLIP
R3016
DARK CLIP
FM FREQ
C3020
BUFFER Q3012
NONLINEAR ENPHASIS C3050, C3051, R3045, D3004, 3005
TP3003
R3012
DEVIATION
TP3009
TP3010
R3019
H.P.F C3024, 3025 L3003, 3004
REC CURR
Q3002 (DELAYED REC PLAY-ON)
R3020
R3024
C3023
REC CHRO
FROM IC80
TP3002
Q3009 (REC-ON)
Q3010 (P.B-ON)
L P F FL3001
PHASE COMPEN SATOR FL3004
BUFFER Q3011
DE EMPHASIS C3081, 3082, R3102
AMP Q3016
TP3016
1.3Vp-p
0.5Vp-p
P3002
1 EE Ⓗ
TP3018
2.0Vp-p
TP3017
P3003
VIDEO OUT (FOR RF CON
BUFFER Q3013
FL3002
BUFFER Q3014
R3162
D3023
R3069
Q3028 (CUE/REV/×2/×½ STILL-ON)
JB
TRICK PLAY Ⓗ
EE
VV
AMP
MIX AMP
NOISE CANCEL
IC3004
IC3004
AMP
AMP Q3021
0.4Vp-p
R3103
P B LEVEL
0.3Vp-p
VIDEO (FOR HSS)
TO IC8003-(8)
P3004
VIDEO OUT
P B CHROMA
FROM IC8001-(7)
P.B Mode
Rec Mode
AMP Q3017
H.P.F C3088, 3089 R3113, 3114
BUFFER Q3019
SUB LIMITER IC3002
MIX AMP Q3020
R3054
LIM BAL 2
0.7Vp-p
LIM BAL 1
R3083
1H DELAY LINE DL3001
TP3014
LIMITER
FM DEMOD.
MIX
GATE AMP
DROP OUT DETECTOR
IC3004
627Hz C3096,
JC
2 D.O.C

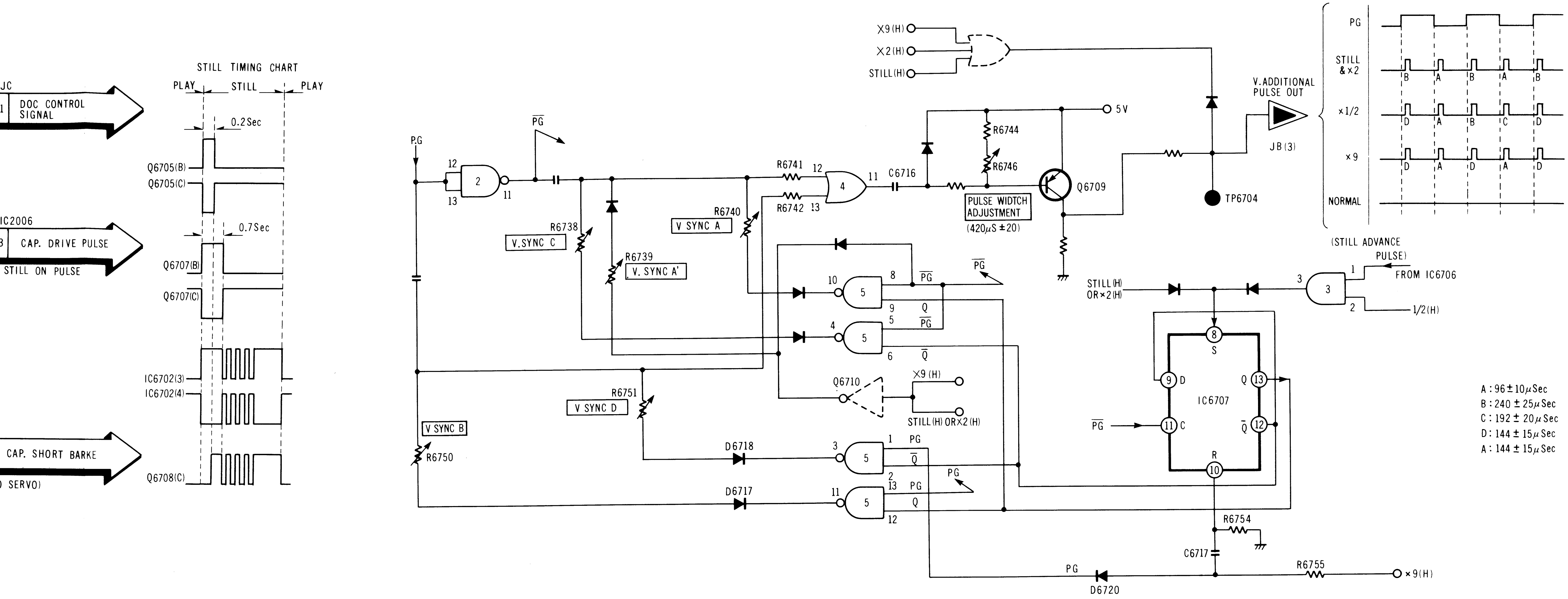

TP3009
TP3010
H.P.F C3024,3025 L3003,3004
MIX Q3003
REC AMP Q3004 Q3005
TP3011
4.3Vp-p
P3007
2 VIDEO HEAD A
VIDEO HEAD (A)
REC CURR
Q3002 (DELAYED REC PLAY-ON)
P3002
REC PLAY 12V 2
R3020
R3024
C3023
Q3006 (P.B-ON)
P3002
P.B 12V 5
P3007
5 VIDEO HEAD B
VIDEO HEAD(B)
REC CHROMA
FROM IC8001-(7)
0.9Vp-p
AMP Q3017
H.P.F C3088,3089 R3113,3114
BUFFER Q3019
SUB LIMITER IC3002
MIX AMP Q3020
R3054
LIM BAL 2
0.7Vp-p
10Vp-p
TP3012
JA
4 HEAD SWPULSE
1H DELAY LINE DL3001
TP3014
1.3Vp-p
MIX
GATE AMP
DROP OUT DETECTOR
627Hz TRAP C3096, L3026
AMP Q3022
PHASE COMPENSATOR Q3023,L3022,C3098, R3131
0.9Vp-p
TP3013
AMP
IC3003
R3138
RF LEVEL
BALANCE
R3208
JC
2 D.O.C PULSE
Q-A
R3207
FILTER AMP
AMP
HEAD SW
IC3003
FILTER AMP
AMP
Q-B
R3206
C3038
PEAK A
C3037
PEAK B
TP3007
0.2Vp-p
R3057
TP3008
Q3007 (REC-ON)
D3002
Q3008 (REC-ON)
TP3006
R3060
TP3005
P3007
VIDEO HEAD A 1
P3007
REC. PLAY 12V 2
P3007
VIDEO HEAD B 6
14
13
12
10
7
5
6
11
9
8
3

STILL BLOCK DIAGRAM *Still Advance*



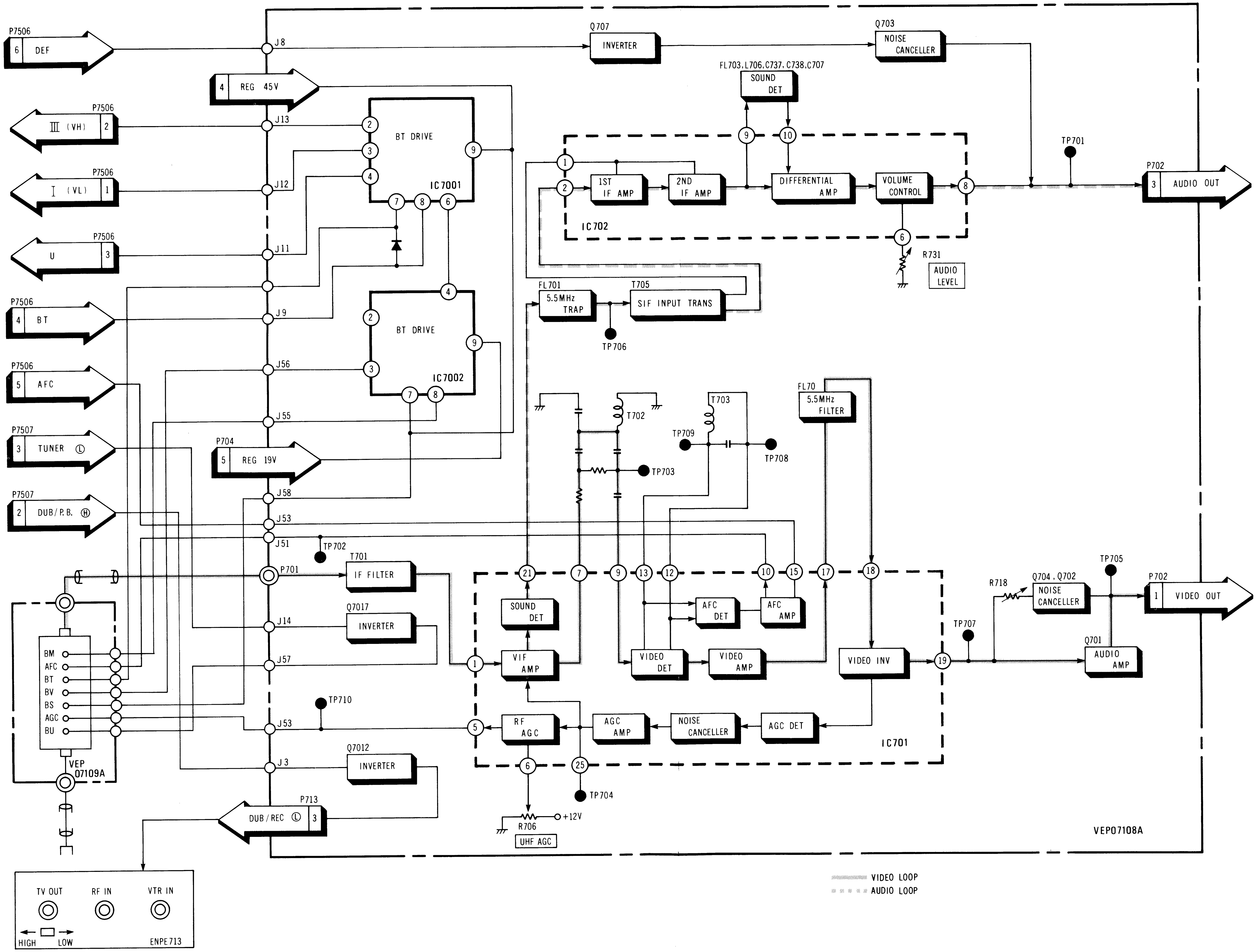
5V
250μ Sec
IC6706
S
D
Q
Q̄
C
R
R6725
(250μs±10)
25Hz
(1/4 DIVIDER)
IC6701
12.5Hz
6.25Hz
C6705
R6715
C6711
R6730
FRAME ADV.
(15±0.5 mSec)
(15m Sec)
TP6701
TP6702
TP6703
JA
4 SWITCHING PULSE
PG
25Hz
JC
2 DOC INPUT
PULSE AMP
Q6701
DOC CONTROL VOLTAGE (F.B)
Q6702~Q6704
JC
1 DOC CONTROL SIGNAL
12V
IC2006
3 CAP. DRIVE PULSE
STILL ON PULSE
Q6708
STILL (H)
100K
A
B
C
P2005
4 COMMAND FRAME ADVANCE (H)
P2005
3 × 9 (H)
P2005
1 STILL (H)
Q6711
Q6706
Q6705
Q6707
(0.7 Sec ON)
D6717
C6706
R6717
(0.2Sec)
+5V
(0.2Sec)
C6707
(0.7Sec)
D6721
C6713
STILL(H)
(0.7Sec)
(0.2Sec)
D6723
CAP. SHORT BARKE
(TO SERVO)
D6722
½(H)
D6724
½×9(H)
STILL ADVANCE
(TO SERVO)
STILL
PLAY
Q6705(B)
Q6705(C)
Q6707(B)
Q6707(C)
IC6702(3)
IC6702(4)
Q6708(C)

STILL BLOCK DIAGRAM *Artificial Pulse Generator*

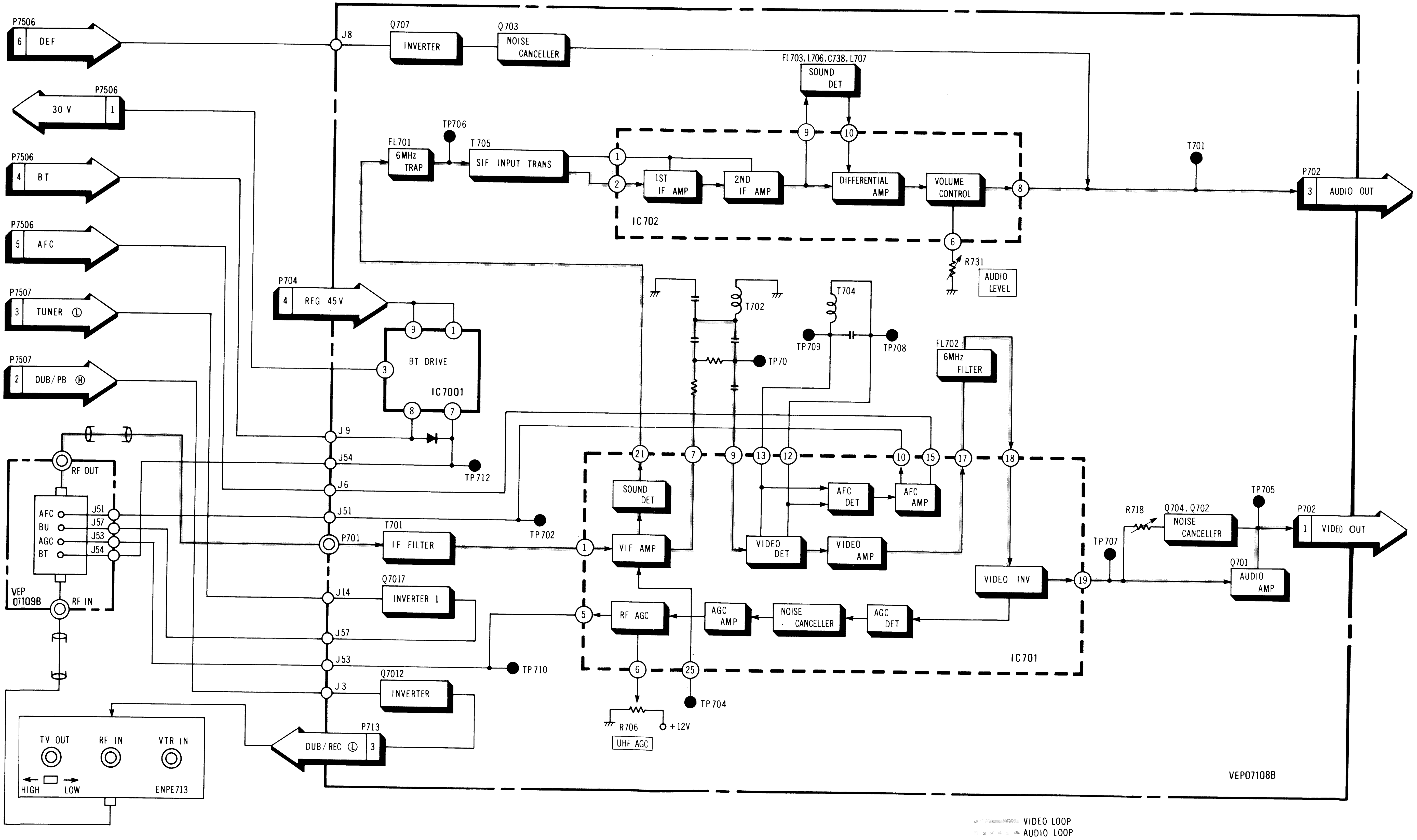

JC
1
DOC CONTROL SIGNAL
IC2006
3
CAP. DRIVE PULSE
STILL ON PULSE
CAP. SHORT BARKE
SERVO)
STILL TIMING CHART
PLAY
STILL
PLAY
0.2Sec
Q6705(B)
Q6705(C)
0.7Sec
Q6707(B)
Q6707(C)
IC6702(3)
IC6702(4)
Q6708(C)
P.G
PG
12
13
2
11
V.SYNC C
R6738
R6739
V. SYNC A'
V SYNC A
R6740
R6741
R6742
12
13
4
11
C6716
X9(H)
X2(H)
STILL(H)
5V
R6744
R6746
PULSE WIDTCH ADJUSTMENT
(420µS ±20)
Q6709
V.ADDITIONAL PULSE OUT
JB(3)
TP6704
10
8
PG
PG
5
9
Q
5
PG
4
5
6
Q
Q6710
×9 (H)
STILL(H) OR×2 (H)
V SYNC D
R6751
V SYNC B
R6750
D6718
3
1
PG
5
Q
2
13
PG
PG
D6717
11
5
Q
12
STILL(H)
OR×2(H)
3
3
1
2
(STILL ADVANCE PULSE)
FROM IC6706
1/2(H)
8
S
9
D
Q
13
IC6707
PG
11
C
Q
12
R
10
R6754
C6717
R6755
×9(H)
PG
D6720
PG
STILL &×2
×1/2
×9
NORMAL
B
A
B
A
B
D
A
B
C
D
D
A
D
A
D
A : 96±10µSec
B : 240 ± 25µSec
C : 192 ± 20µSec
D : 144 ± 15µSec
A : 144 ± 15µSec

STILL ADVANCE
SERVO)

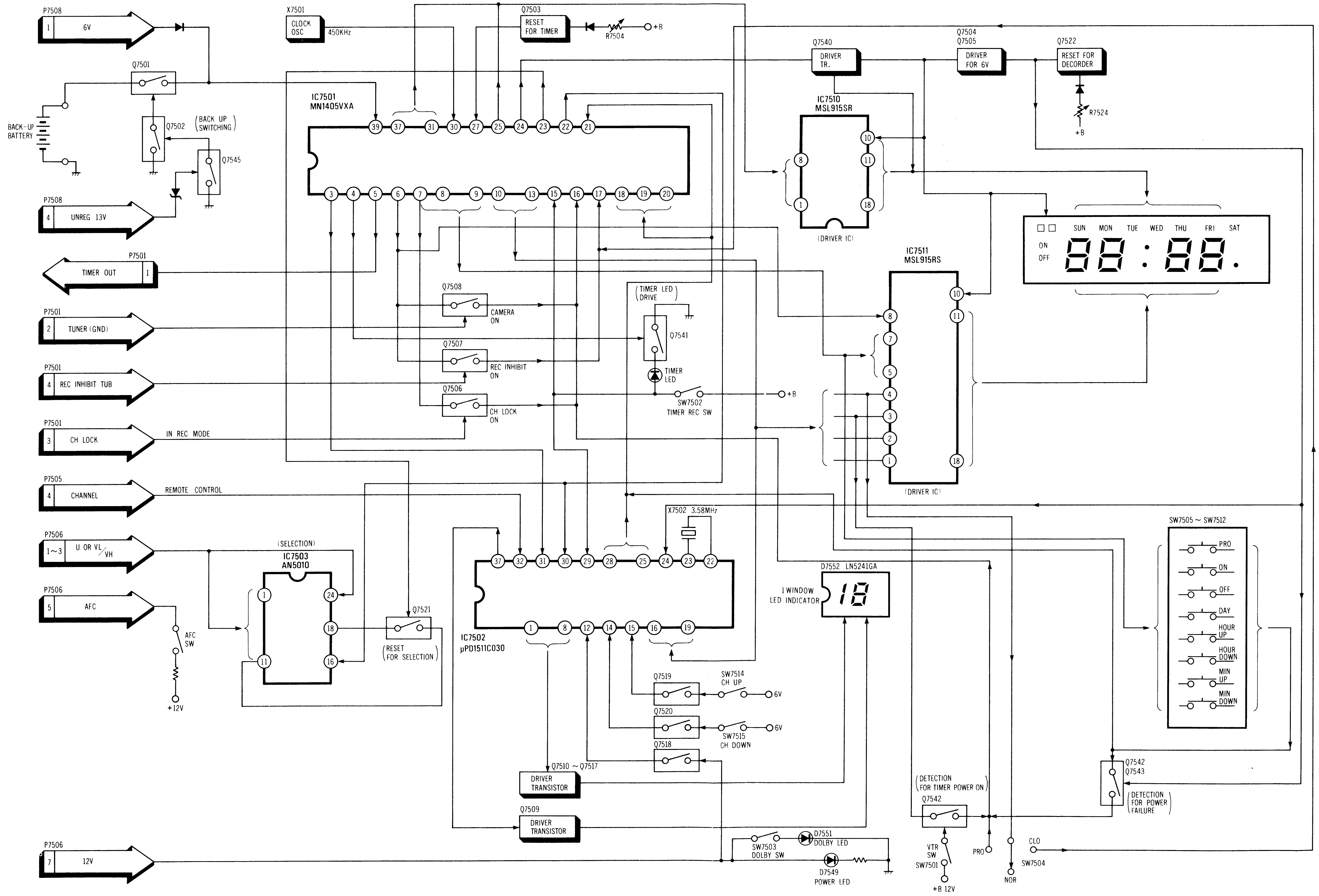
TV DEMODULATOR BLOCK DIAGRAM *NV-7200E*


P7506
6 DEF
4 REG 45V
2 Ⅲ (VH)
1 Ⅰ (VL)
3 U
4 BT
5 AFC
P7507
3 TUNER Ⓛ
2 DUB/P.B. Ⓗ
P704
5 REG 19V
J8
J13
J12
J11
J9
J56
J55
J58
J53
J51
P701
J14
J57
J53
J3
TP702
TP710
BT DRIVE
IC7001
BT DRIVE
IC7002
Q707
INVERTER
Q703
NOISE CANCELLER
FL703.L706.C737.C738.C707
SOUND DET
1ST IF AMP
2ND IF AMP
DIFFERENTIAL AMP
VOLUME CONTROL
IC702
R731
AUDIO LEVEL
TP701
P702
3 AUDIO OUT
FL701
5.5MHz TRAP
T705
SIF INPUT TRANS
TP706
T702
T703
TP709
TP708
TP703
FL70
5.5MHz FILTER
T701
IF FILTER
Q7017
INVERTER
Q7012
INVERTER
SOUND DET
VIF AMP
AFC DET
AFC AMP
VIDEO DET
VIDEO AMP
VIDEO INV
RF AGC
AGC AMP
NOISE CANCELLER
AGC DET
IC701
TP704
R706
+12V
UHF AGC
TP707
R718
Q704.Q702
NOISE CANCELLER
TP705
1 VIDEO OUT
Q701
AUDIO AMP
BM
AFC
BT
BV
BS
AGC
BU
VEP 07109A
P713
DUB/REC Ⓛ 3
TV OUT
RF IN
VTR IN
HIGH
LOW
ENPE713
VEP07108A
VIDEO LOOP
AUDIO LOOP

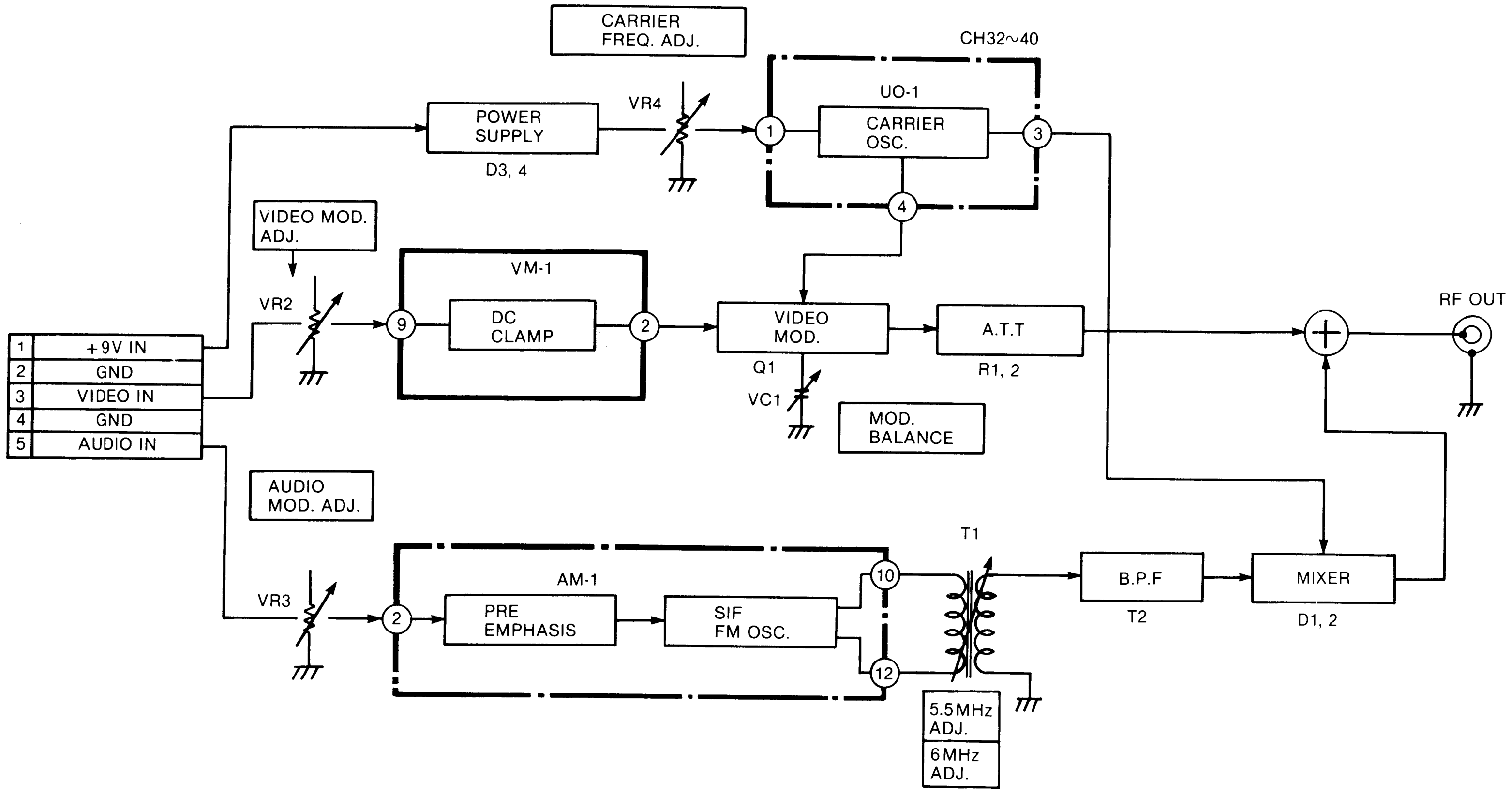
TV DEMODULATOR BLOCK DIAGRAM *NV-7200B*


P7506
6 DEF
P7506
30 V 1
P7506
4 BT
P7506
5 AFC
P7507
3 TUNER Ⓛ
P7507
2 DUB/PB Ⓗ
RF OUT
AFC
BU
AGC
BT
J51
J57
J53
J54
VEP 07109B
RF IN
TV OUT
RF IN
VTR IN
HIGH
LOW
ENPE713
J8
Q707
INVERTER
Q703
NOISE CANCELLER
FL703, L706, C738, L707
SOUND DET
TP706
FL701
6MHz TRAP
T705
SIF INPUT TRANS
1
2
1ST IF AMP
2ND IF AMP
9
10
DIFFERENTIAL AMP
VOLUME CONTROL
8
6
IC702
R731
AUDIO LEVEL
T701
P702
3 AUDIO OUT
P704
4 REG 45V
9
1
3
BT DRIVE
IC7001
8
7
T702
T704
TP709
TP708
TP70
FL702
6MHz FILTER
J9
J54
TP712
J6
J51
TP702
P701
T701
IF FILTER
21
7
9
13
12
10
15
17
18
SOUND DET
AFC DET
AFC AMP
1
VIF AMP
VIDEO DET
VIDEO AMP
VIDEO INV
19
Q7017
J14
INVERTER 1
J57
5
RF AGC
AGC AMP
NOISE CANCELLER
AGC DET
IC701
J53
TP710
6
25
TP704
Q7012
J3
INVERTER
R706
+12V
UHF AGC
P713
DUB/REC Ⓛ 3
R718
TP707
Q704, Q702
NOISE CANCELLER
TP705
P702
1 VIDEO OUT
Q701
AUDIO AMP
VEP07108B
VIDEO LOOP
AUDIO LOOP

PROGRAMMABLE TIMER BLOCK DIAGRAM

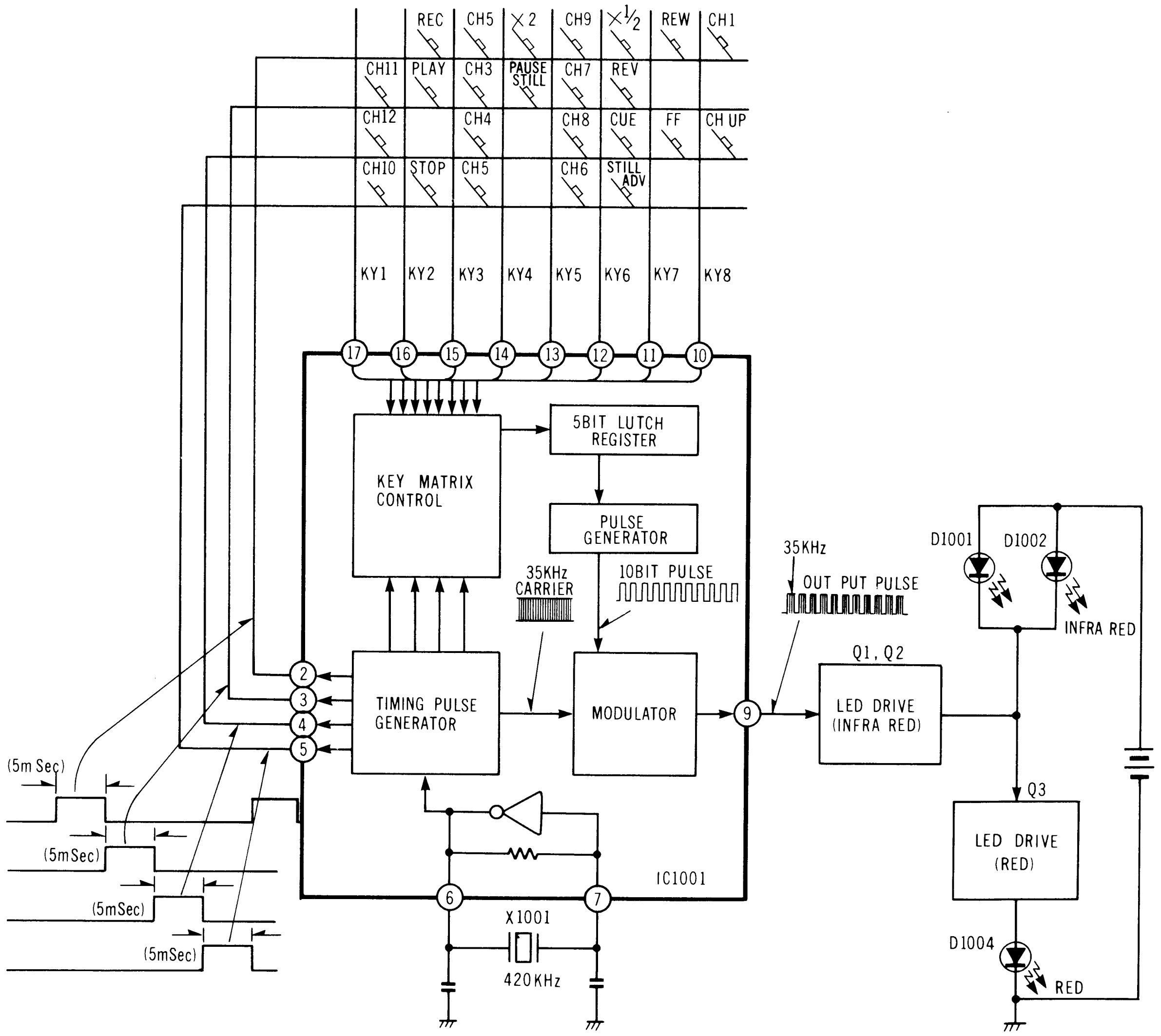

P7508
1 6V
Q7501
BACK-UP BATTERY
Q7502
(BACK UP SWITCHING)
Q7545
P7508
4 UNREG 13V
P7501
TIMER OUT 1
P7501
2 TUNER (GND)
P7501
4 REC INHIBIT TUB
P7501
3 CH LOCK
IN REC MODE
P7505
4 CHANNEL
REMOTE CONTROL
P7506
1~3 U OR VL/VH
P7506
5 AFC
AFC SW
+12V
P7506
7 12V
X7501
CLOCK OSC
450KHz
Q7503
RESET FOR TIMER
R7504
+B
IC7501
MN1405VXA
39 37 31 30 27 25 24 23 22 21
3 4 5 6 7 8 9 10 13 15 16 17 18 19 20
Q7508
CAMERA ON
Q7507
REC INHIBIT ON
Q7506
CH LOCK ON
(TIMER LED DRIVE)
Q7541
TIMER LED
SW7502
TIMER REC SW
+B
Q7540
DRIVER TR.
IC7510
MSL915SR
10 8 11 1 18
(DRIVER IC)
Q7504
Q7505
DRIVER FOR 6V
Q7522
RESET FOR DECORDER
R7524
+B
SUN MON TUE WED THU FRI SAT
ON
OFF
88:88.
IC7511
MSL915RS
10 8 11 7 5 4 3 2 1 18
(DRIVER IC)
(SELECTION)
IC7503
AN5010
1 24 18 11 16
Q7521
(RESET FOR SELECTION)
X7502 3.58MHz
37 32 31 30 29 28 25 24 23 22
1 8 12 14 15 16 19
IC7502
µPD1511C030
Q7519
SW7514
CH UP
6V
Q7520
SW7515
CH DOWN
6V
Q7518
Q7510 ~ Q7517
DRIVER TRANSISTOR
Q7509
DRIVER TRANSISTOR
D7552 LN5241GA
1 WINDOW LED INDICATOR
18
SW7503
DOLBY SW
D7551
DOLBY LED
D7549
POWER LED
(DETECTION FOR TIMER POWER ON)
Q7542
VTR SW
SW7501
+B 12V
PRO
NOR
CLO
SW7504
SW7505 ~ SW7512
PRO
ON
OFF
DAY
HOUR UP
HOUR DOWN
MIN UP
MIN DOWN
Q7542
Q7543
(DETECTION FOR POWER FAILURE)

RF CONVERTER BLOCK DIAGRAM



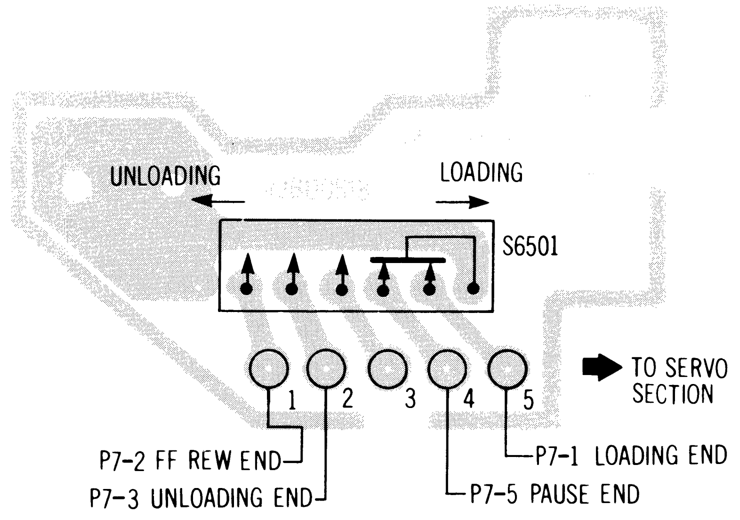
CARRIER FREQ. ADJ.
CH32~40
UO-1
CARRIER OSC.
POWER SUPPLY
D3, 4
VR4
VIDEO MOD. ADJ.
VR2
VM-1
DC CLAMP
VIDEO MOD.
Q1
VC1
A.T.T
R1, 2
MOD. BALANCE
RF OUT
1 +9V IN
2 GND
3 VIDEO IN
4 GND
5 AUDIO IN
AUDIO MOD. ADJ.
VR3
AM-1
PRE EMPHASIS
SIF FM OSC.
T1
B.P.F
T2
MIXER
D1, 2
5.5MHz ADJ.
6MHz ADJ.

INFRARED TRANSMITTER BLOCK DIAGRAM

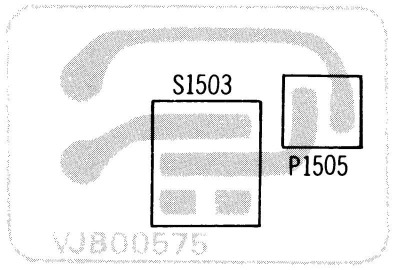


REC
CH5
×2
CH9
×½
REW
CH1
CH11
PLAY
CH3
PAUSE STILL
CH7
REV
CH12
CH4
CH8
CUE
FF
CH UP
CH10
STOP
CH5
CH6
STILL ADV
KY1
KY2
KY3
KY4
KY5
KY6
KY7
KY8
KEY MATRIX CONTROL
5BIT LUTCH REGISTER
PULSE GENERATOR
35KHz CARRIER
10BIT PULSE
TIMING PULSE GENERATOR
MODULATOR
IC1001
X1001
420KHz
(5m Sec)
(5mSec)
(5mSec)
(5mSec)
35KHz
OUT PUT PULSE
Q1, Q2
LED DRIVE (INFRA RED)
D1001
D1002
INFRA RED
Q3
LED DRIVE (RED)
D1004
RED

MODE SELECT SW BOARD (VJB00518)

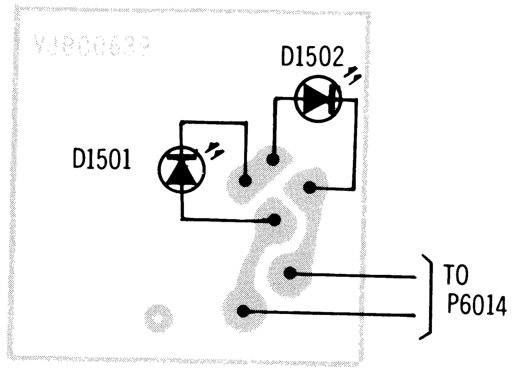

UNLOADING
LOADING
S6501
1
2
3
4
5
TO SERVO SECTION
P7-2 FF REW END
P7-3 UNLOADING END
P7-1 LOADING END
P7-5 PAUSE END

MEMORY SW BOARD (VJB00575)

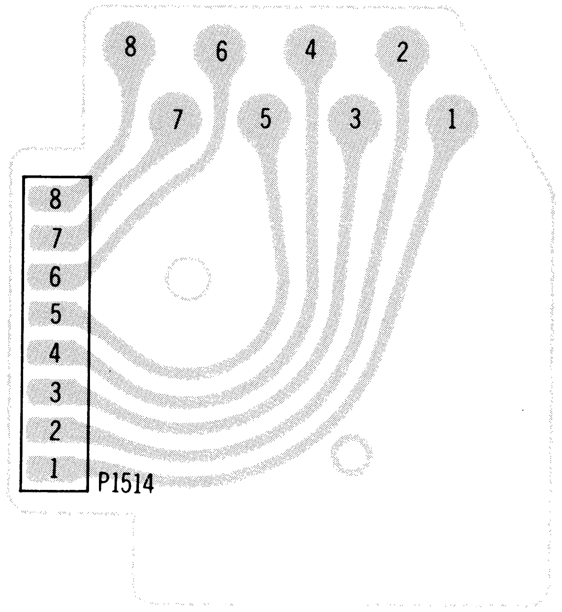

S1503
P1505
VJB00575

1	COUNTER
2	COUNTER

SENSOR LAMP BOARD (VJB00639)

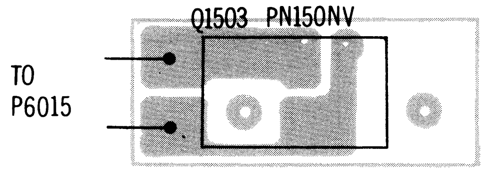

VJB00639
D1502
D1501
TO P6014

PRESSURE SOLESOID BOARD (VJB00638)

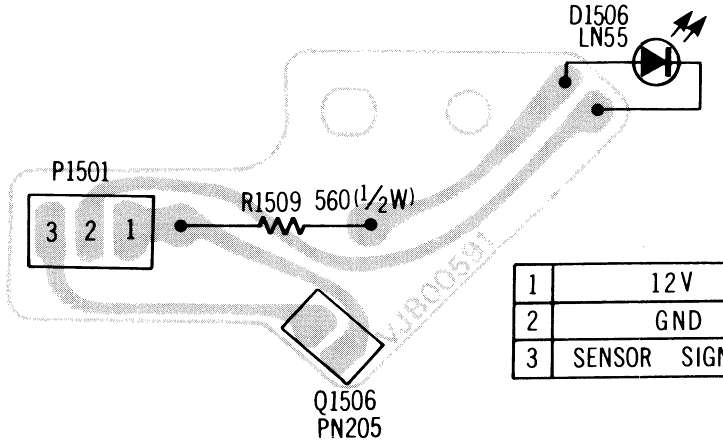

8
6
4
2
7
5
3
1
8
7
6
5
4
3
2
1
P1514

1	TAKE UP PHOTO TR
2	PRESSURE SOL A
3	PRESSURE SOL B
4	PRESSURE SOL C
5	LOADING Ⓜ NEGA
6	LOADING Ⓜ POSI
7	GND
8	DEW SENSOR

SUPPLY PHOTO TR BOARD (VJB00637)

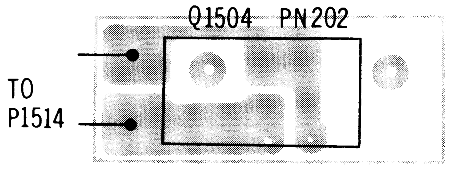

Q1503 PN150NV
TO P6015

TAPE SLACK SENSOR BOARD (VJB00591)

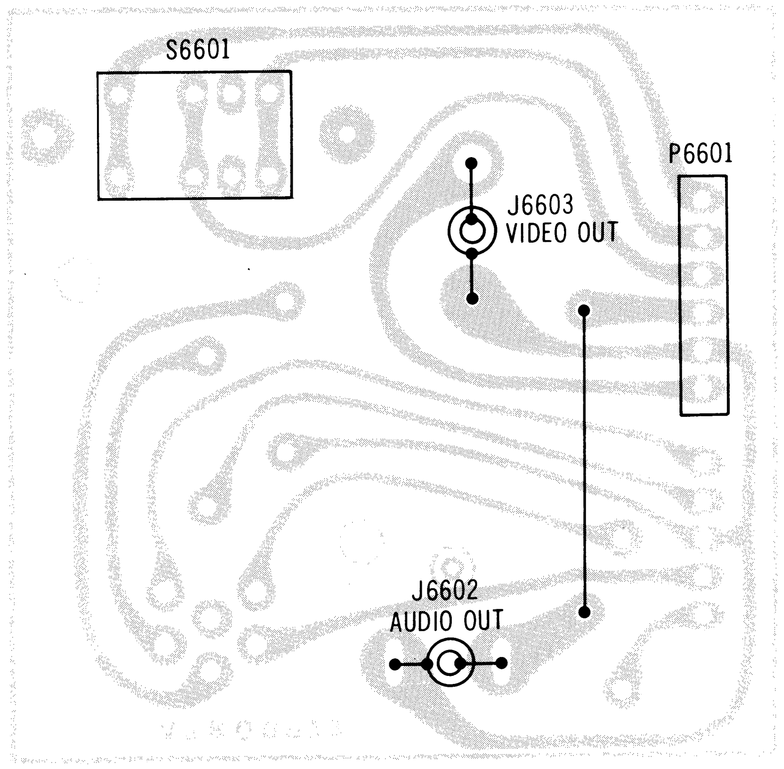

D1506 LN55
P1501
3 2 1
R1509 560(1/2W)
VJB00591
Q1506 PN205

1	12V
2	GND
3	SENSOR SIGNAL

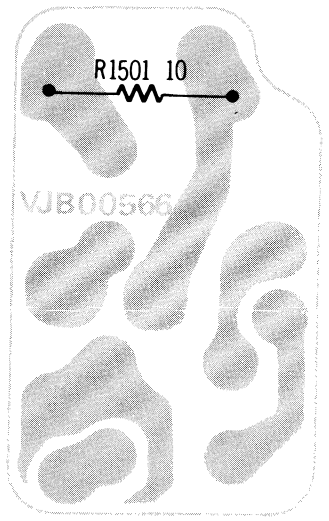
TAKEUP PHOTO TR BOARD (VJB00636)


Q1504 PN202
TO P1514

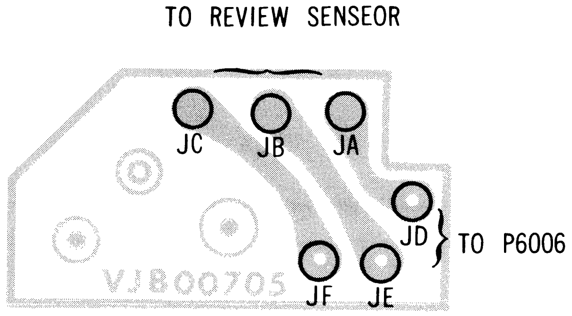
OUTPUT JACK BOARD (VJB00653)


S6601
P6601
J6603 VIDEO OUT
J6602 AUDIO OUT

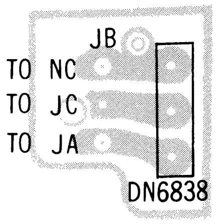
A/C HEAD BOARD (VJB00566)


R1501 10
VJB00566

REVIEW SENSOR CONNECTION BOARD (VJB00705)

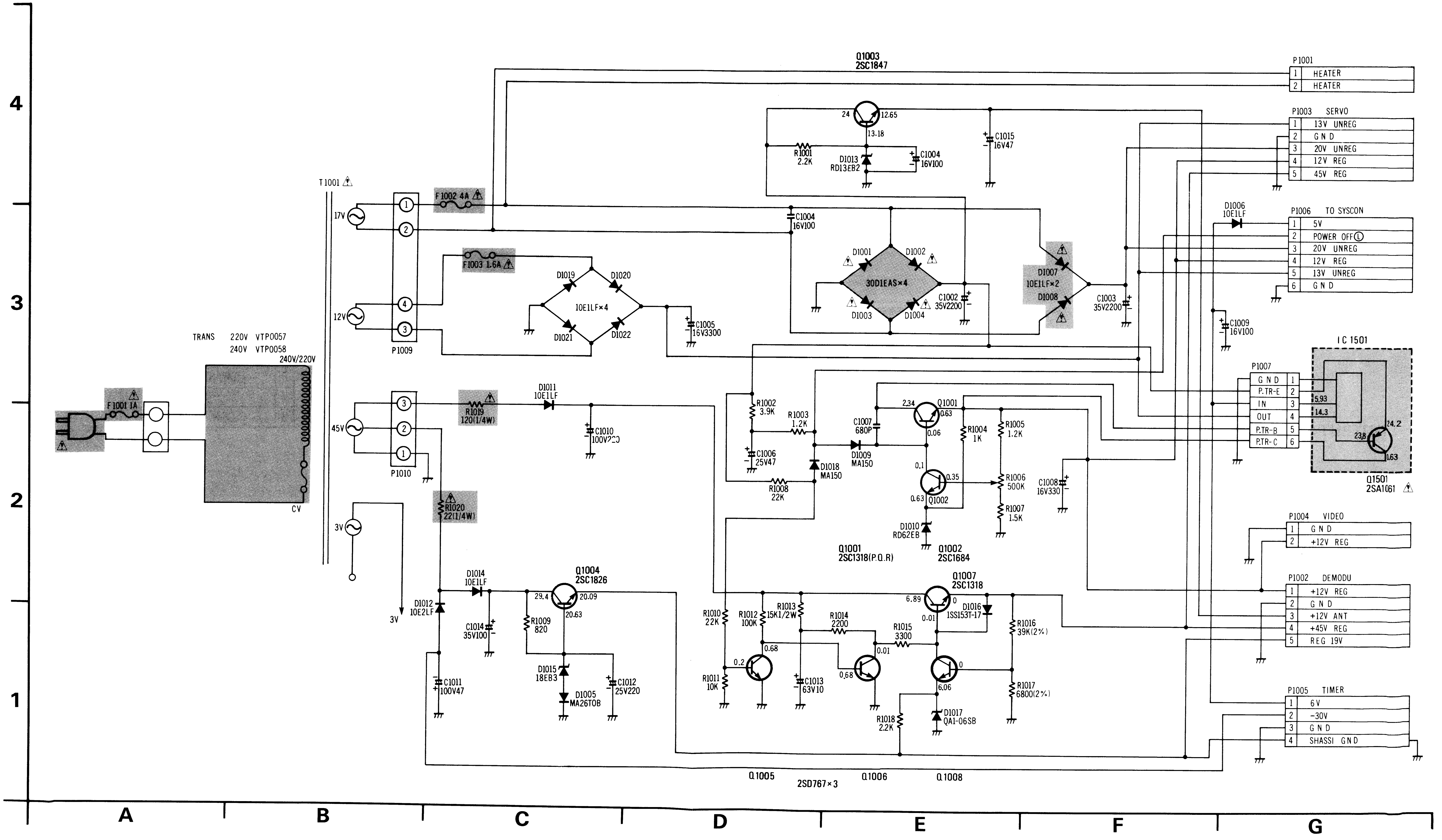

TO REVIEW SENSEOR
JC
JB
JA
JD
JF
JE
TO P6006
VJB00705

REVIEW SENSOR BOARD (VJB00713)

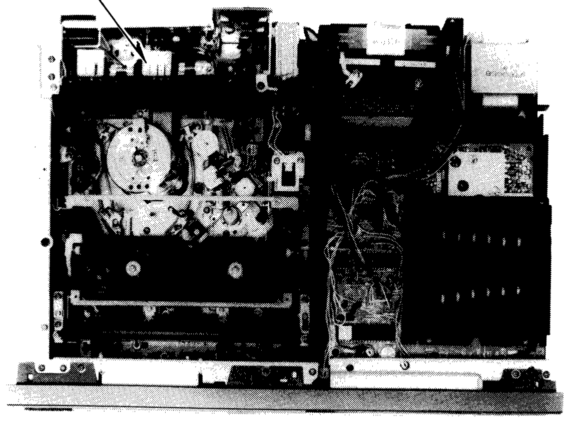

JB
TO NC
TO JC
TO JA
DN6838

POWER SUPPLY SCHEMATIC DIAGRAM

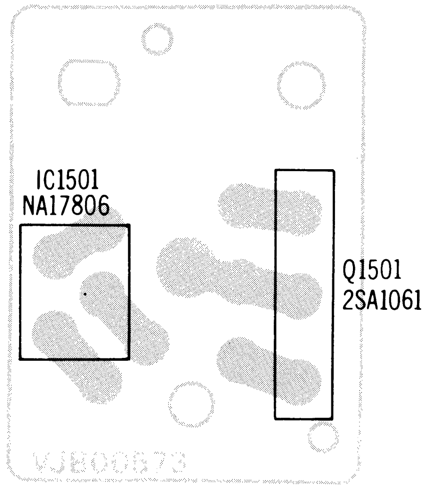
Power Supply C.B.A	
Q1001	E-2
Q1002	E-2
Q1003	E-4
Q1004	C-2
Q1005	D-1
Q1006	E-1
Q1007	E-2
Q1008	E-1
Q1501	G-2



4
3
2
1
A
B
C
D
E
F
G
F1001 1A
TRANS 220V VTP0057
240V VTP0058
240V/220V
CV
T1001
17V
12V
45V
3V
P1009
P1010
F1002 4A
F1003 1.6A
D1019
D1020
D1021
D1022
10E1LF×4
C1005 16V3300
R1019 120(1/4W)
D1011 10E1LF
C1010 100V220
R1020 22(1/4W)
D1012 10E2LF
D1014 10E1LF
C1014 35V100
C1011 100V47
Q1004 2SC1826
29.4
20.09
20.63
R1009 820
D1015 18EB3
D1005 MA26T0B
C1012 25V220
Q1003 2SC1847
24
12.65
13.18
R1001 2.2K
D1013 RD13EB2
C1004 16V100
C1015 16V47
C1004 16V100
D1001
D1002
D1003
D1004
30D1EAS×4
C1002 35V2200
D1007 10E1LF×2
D1008
C1003 35V2200
D1006 10E1LF
C1009 16V100
R1002 3.9K
R1003 1.2K
C1006 25V47
R1008 22K
D1018 MA150
D1009 MA150
C1007 680P
2.34
Q1001
0.63
0.06
R1004 1K
R1005 1.2K
0.1
0.35
0.63
Q1002
R1006 500K
R1007 1.5K
C1008 16V330
D1010 RD62EB
Q1001 2SC1318(P.Q.R)
Q1002 2SC1684
Q1007 2SC1318
6.89
0
0.01
D1016 1SS153T-17
R1016 39K(2%)
R1017 6800(2%)
R1010 22K
R1011 10K
R1012 100K
R1013 15K1/2W
R1014 2200
R1015 3300
0.2
0.68
0.68
0.01
C1013 63V10
0
6.06
D1017 QA1-06SB
R1018 2.2K
Q1005
2SD767×3
Q1006
Q1008
P1001
1 HEATER
2 HEATER
P1003 SERVO
1 13V UNREG
2 GND
3 20V UNREG
4 12V REG
5 45V REG
P1006 TO SYSCON
1 5V
2 POWER OFF Ⓛ
3 20V UNREG
4 12V REG
5 13V UNREG
6 GND
IC 1501
P1007
GND 1
P.TR-E 2
IN 3
OUT 4
P.TR-B 5
P.TR-C 6
5.93
14.3
24.2
23.8
0.63
Q1501 2SA1061
P1004 VIDEO
1 GND
2 +12V REG
P1002 DEMODU
1 +12V REG
2 GND
3 +12V ANT
4 +45V REG
5 REG 19V
P1005 TIMER
1 6V
2 -30V
3 GND
4 SHASSI GND


Power Supply Board

POWER TR BOARD (VJB00573)


IC1501
NA17806
Q1501
2SA1061
VJB00573

P1001 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	Heater	— Heater
2	Heater	— Heater

P1002 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	+12V	P704-2 TV-Demodu
2	GND	P704-3 TV-Demodu
3	12V Ant	P704-1 TV-Demodu
4	Reg 45V	P705-4 TV-Demodu
5	Reg 19V	P705-5 TV-Demodu

P1003 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	13V Unreg	P2006-5 Servo & Still
2	GND	P2006-4 Servo & Still
3	20V Unreg	P2006-1 Servo & Still
4	12V Reg	P2006-3 Servo & Still
5	45V Reg	P2006-2 Servo & Still

P1004 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	GND	— Luminance, Chrominance & Audio
2	+12V	— Luminance, Chrominance & Audio

P1005 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	13V Unreg	P7508-4 Timer
2	6V	P7508-1 Timer
3	−30V	P7508-2 Timer
4	GND	P7508-3 Timer
5	GND	P7508-3 Timer

P1006 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	5V	P6012-1 System Control
2	Power Off (L)	P6012-2 System Control
3	20V Unreg	P6004-4 System Control
4	12V Reg	P6012-4 System Control
5	13V Unreg	P6012-5 System Control
6	GND	P6012-6 System Control

P1007 (Power Supply C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	GND	— Power TR
2	Power TR (E)	— Power TR
3	6V-Out	— Power TR
4	12V Unreg	— Power TR
5	Power TR (B)	— Power TR
6	Power TR (C)	— Power TR

P1008 (Power Supply C.B.A)

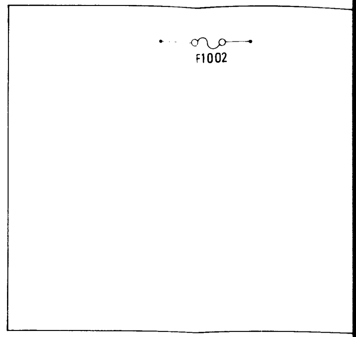
PIN NO.	SIGNAL NAME	DESTINATION
1	AC	— AC IN
2	—	— —
3	AC	— AC IN

P1009 (Power Supply C.B.A)

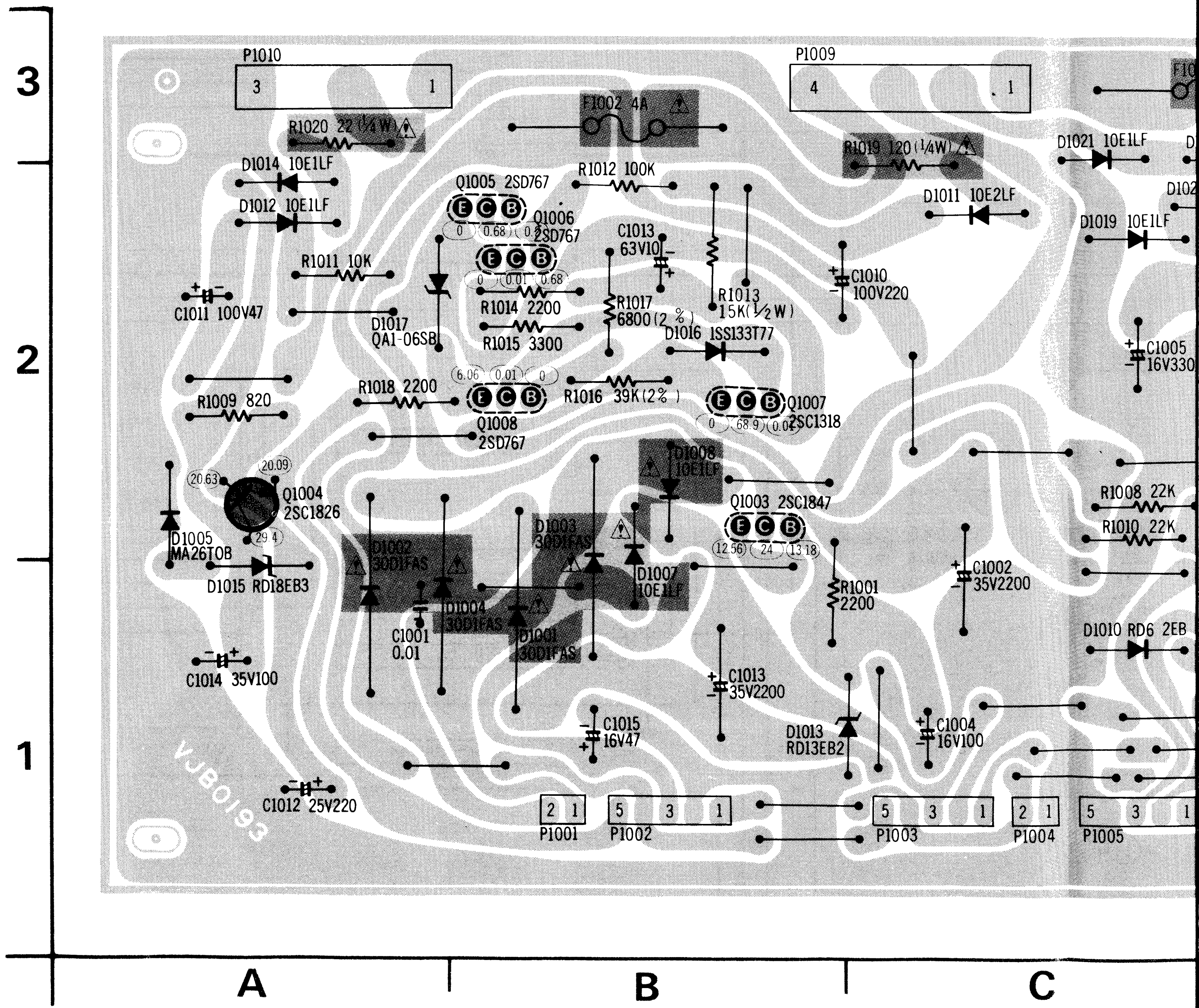
PIN NO.	SIGNAL NAME	DESTINATION
1	AC 13V	— Power Transformer
2	AC 13V	— Power Transformer
3	AC 17V	— Power Transformer
4	AC 17V	— Power Transformer

P1010 (Power Supply C.B.A)

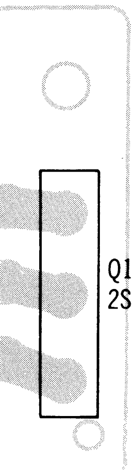
PIN NO.	SIGNAL NAME	DESTINATION
1	AC 45V	— Power Transformer
2	AC 19V	— Power Transformer
3	GND	— Power Transformer



POWER SUPPLY BOARD (VEP0193A)


3
2
1
A
B
C
P1010
P1009
F1002 4A
R1020 22 (1/4W)
R1019 120 (1/4W)
D1014 10E1LF
D1012 10E1LF
D1021 10E1LF
D1011 10E2LF
D1019 10E1LF
Q1005 2SD767
Q1006 2SD767
R1012 100K
R1011 10K
C1013 63V10
R1013 15K(1/2W)
R1017 6800(2%)
C1010 100V220
C1011 100V47
D1017 QA1-06SB
R1014 2200
R1015 3300
D1016 1SS133T77
C1005 16V330
R1009 820
R1018 2200
R1016 39K(2%)
Q1008 2SD767
Q1007 2SC1318
Q1004 2SC1826
D1005 MA26TOB
D1015 RD18EB3
D1002 30D1FAS
D1003 30D1FAS
D1004 30D1FAS
D1001 30D1FAS
D1006 10E1LF
D1007 10E1LF
Q1003 2SC1847
R1008 22K
R1010 22K
R1001 2200
C1002 35V2200
C1001 0.01
C1013 35V2200
C1014 35V100
C1015 16V47
D1013 RD13EB2
C1004 16V100
D1010 RD6 2EB
C1012 25V220
VJB0193
P1001
P1002
P1003
P1004
P1005

OARD
(VJB00573)


Q1501
2SA1061

pply C.B.A)	
	DESTINATION
012-1	System Control
012-2	System Control
004-4	System Control
012-4	System Control
012-5	System Control
012-6	System Control

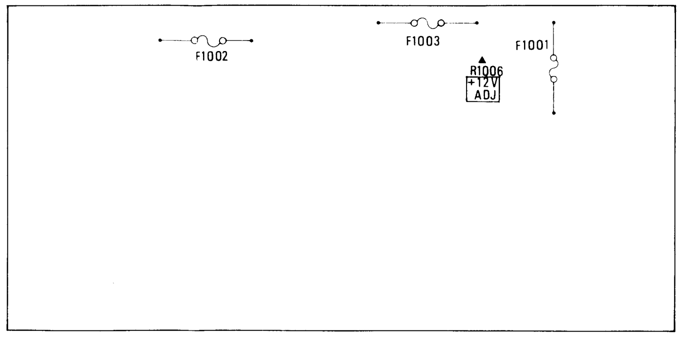
pply C.B.A)	
	DESTINATION
—	Power TR
—	Power TR
—	Power TR
—	Power TR
—	Power TR
—	Power TR

pply C.B.A)	
	DESTINATION
—	AC IN
—	—
—	AC IN

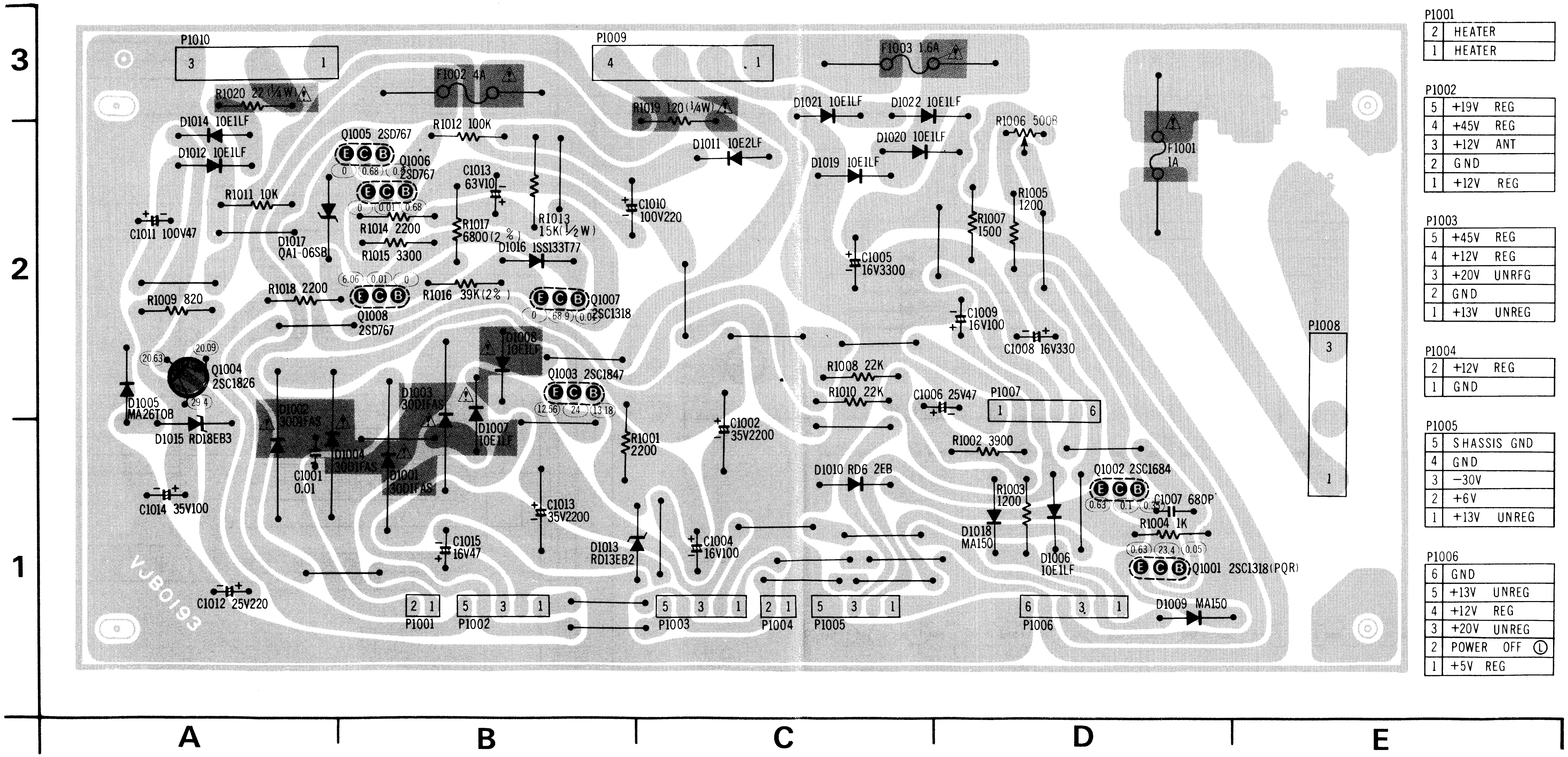
pply C.B.A)	
	DESTINATION
—	Power Transformer
—	Power Transformer
—	Power Transformer
—	Power Transformer

pply C.B.A)	
	DESTINATION
—	Power Transformer
—	Power Transformer
—	Power Transformer

POWER SUPPLY BOARD (VEP0193A)


F1002
F1003
F1001
R1006
+12V
ADJ

Power Supply C.B.A.	
Q1001	D-1
Q1002	D-1
Q1003	B-2
Q1004	A-2
Q1005	B-2
Q1006	B-2
Q1007	B-2
Q1008	B-2


3
2
1
A
B
C
D
E
P1010
P1009
F1002 4A
F1003 1.6A
F1001 1A
R1020 22 (1/4W)
R1019 120 (1/4W)
D1014 10E1LF
D1012 10E1LF
Q1005 2SD767
Q1006 2SD767
R1012 100K
C1013 63V10
R1011 10K
C1011 100V47
D1017 QA1-06SB
R1014 2200
R1015 3300
R1017 6800 (2%)
R1013 15K (1/2W)
D1016 1SS133T77
C1010 100V220
D1011 10E2LF
D1021 10E1LF
D1022 10E1LF
D1020 10E1LF
D1019 10E1LF
C1005 16V3300
R1006 500B
R1005 1200
R1007 1500
C1009 16V100
C1008 16V330
R1009 820
R1018 2200
Q1008 2SD767
R1016 39K (2%)
Q1007 2SC1318
Q1004 2SC1826
D1005 MA26T0B
D1015 RD18EB3
D1002 30D1FAS
D1004 30D1FAS
D1003 30D1FAS
D1001 30D1FAS
D1008 10E1LF
D1007 10E1LF
Q1003 2SC1847
C1001 0.01
R1001 2200
C1002 35V2200
R1008 22K
R1010 22K
C1006 25V47
P1007
R1002 3900
D1010 RD6 2EB
Q1002 2SC1684
C1007 680P
R1003 1200
D1018 MA150
D1006 10E1LF
R1004 1K
Q1001 2SC1318 (PQR)
C1014 35V100
C1015 16V47
C1013 35V2200
D1013 RD13EB2
C1004 16V100
C1012 25V220
P1001
P1002
P1003
P1004
P1005
P1006
D1009 MA150
P1008
VJB0193

P1001

2	HEATER
1	HEATER

P1002

5	+19V REG
4	+45V REG
3	+12V ANT
2	GND
1	+12V REG

P1003

5	+45V REG
4	+12V REG
3	+20V UNRFG
2	GND
1	+13V UNREG

P1004

2	+12V REG
1	GND

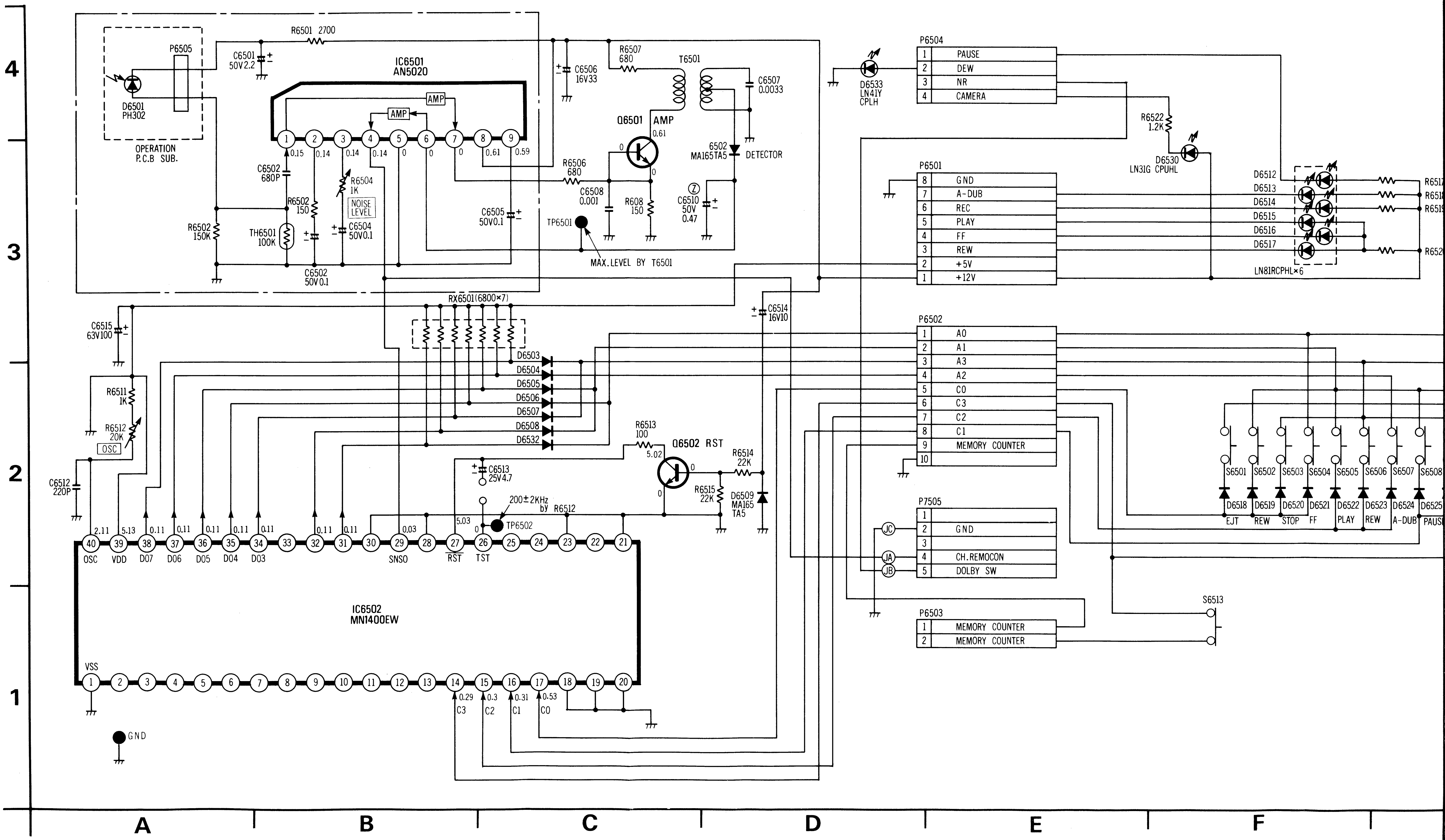
P1005

5	SHASSIS GND
4	GND
3	−30V
2	+6V
1	+13V UNREG

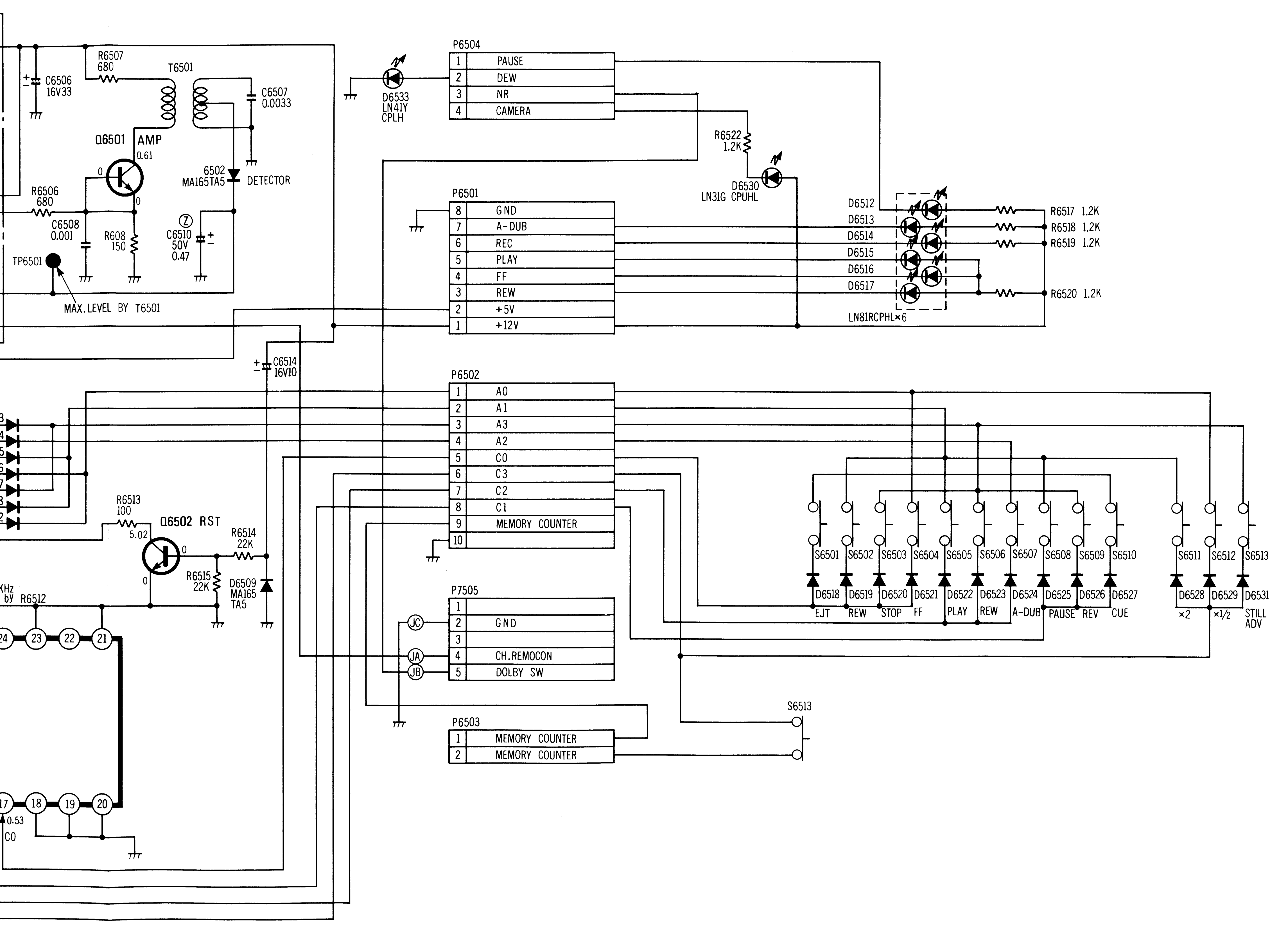
P1006

6	GND
5	+13V UNREG
4	+12V REG
3	+20V UNREG
2	POWER OFF Ⓛ
1	+5V REG

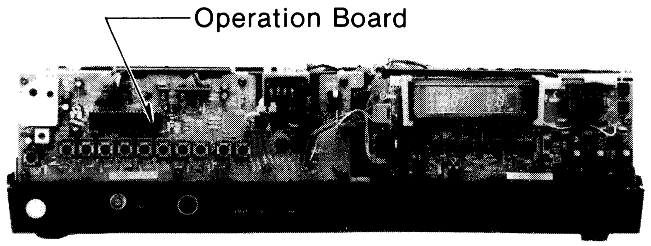
OPERATION SCHEMATIC DIAGRAM

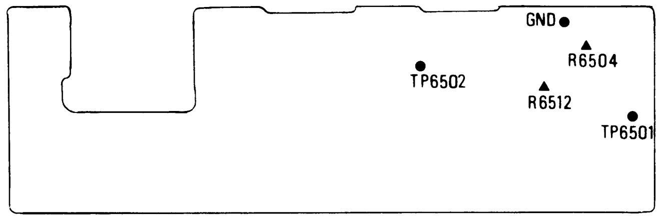


4
3
2
1
A
B
C
D
E
F
D6501
PH302
P6505
OPERATION
P.C.B SUB.
R6501 2700
C6501
50V2.2
IC6501
AN5020
AMP
AMP
0.15
0.14
0.14
0.14
0
0
0
0.61
0.59
C6502
680P
R6502
150
R6504
1K
NOISE LEVEL
C6504
50V0.1
R6502
150K
TH6501
100K
C6502
50V0.1
C6505
50V0.1
C6506
16V33
R6507
680
T6501
C6507
0.0033
Q6501 AMP
0.61
0
0
6502
MA165TA5
DETECTOR
R6506
680
C6508
0.001
R608
150
Z
C6510
50V
0.47
TP6501
MAX. LEVEL BY T6501
D6533
LN41Y
CPLH
P6504
1 PAUSE
2 DEW
3 NR
4 CAMERA
R6522
1.2K
D6530
LN31G CPUHL
P6501
8 GND
7 A-DUB
6 REC
5 PLAY
4 FF
3 REW
2 +5V
1 +12V
D6512
D6513
D6514
D6515
D6516
D6517
LN81RCPHL×6
R6517
R6518
R6519
R652
C6515
63V100
RX6501(6800×7)
D6503
D6504
D6505
D6506
D6507
D6508
D6532
C6514
16V10
P6502
1 A0
2 A1
3 A3
4 A2
5 C0
6 C3
7 C2
8 C1
9 MEMORY COUNTER
10
R6511
1K
R6512
20K
OSC
C6512
220P
R6513
100
5.02
Q6502 RST
0
0
R6514
22K
R6515
22K
D6509
MA165
TA5
C6513
25V4.7
200±2KHz
by R6512
5.03
0
TP6502
2.11
5.13
0.11
0.11
0.11
0.11
0.11
0.11
0.11
0.03
40 OSC
39 VDD
38 D07
37 D06
36 D05
35 D04
34 D03
33
32
31
30
29 SNSO
28
27 RST
26 TST
25
24
23
22
21
IC6502
MN1400EW
VSS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
0.29
C3
0.3
C2
0.31
C1
0.53
C0
GND
P7505
1
2 GND
3
4 CH.REMOCON
5 DOLBY SW
JC
JA
JB
P6503
1 MEMORY COUNTER
2 MEMORY COUNTER
S6513
S6501
S6502
S6503
S6504
S6505
S6506
S6507
S6508
D6518
D6519
D6520
D6521
D6522
D6523
D6524
D6525
EJT
REW
STOP
FF
PLAY
REW
A-DUB
PAUS


C6506
16V33
R6507
680
T6501
C6507
0.0033
Q6501 AMP
0.61
6502
MA165TA5
DETECTOR
R6506
680
C6508
0.001
R608
150
C6510
50V
0.47
TP6501
MAX.LEVEL BY T6501
D6533
LN41Y
CPLH
P6504
1 PAUSE
2 DEW
3 NR
4 CAMERA
R6522
1.2K
D6530
LN31G CPUHL
P6501
8 GND
7 A-DUB
6 REC
5 PLAY
4 FF
3 REW
2 +5V
1 +12V
D6512
D6513
D6514
D6515
D6516
D6517
LN81RCPHL×6
R6517 1.2K
R6518 1.2K
R6519 1.2K
R6520 1.2K
C6514
16V10
P6502
1 A0
2 A1
3 A3
4 A2
5 C0
6 C3
7 C2
8 C1
9 MEMORY COUNTER
10
R6513
100
5.02
Q6502 RST
R6514
22K
R6515
22K
D6509
MA165
TA5
KHz
by R6512
24
23
22
21
17
18
19
20
0.53
C0
P7505
1
2 GND
3
4 CH.REMOCON
5 DOLBY SW
JC
JA
JB
P6503
1 MEMORY COUNTER
2 MEMORY COUNTER
S6513
S6501 S6502 S6503 S6504 S6505 S6506 S6507 S6508 S6509 S6510
D6518 D6519 D6520 D6521 D6522 D6523 D6524 D6525 D6526 D6527
EJT REW STOP FF PLAY REW A-DUB PAUSE REV CUE
S6511 S6512 S6513
D6528 D6529 D6531
×2 ×1/2 STILL ADV
C
D
E
F
G

Operation C.B.A	
Q6501 Q6502	C-3 C-2
IC6501 IC6502	B-4 B-1


Operation Board


GND
R6504
TP6502
R6512
TP6501

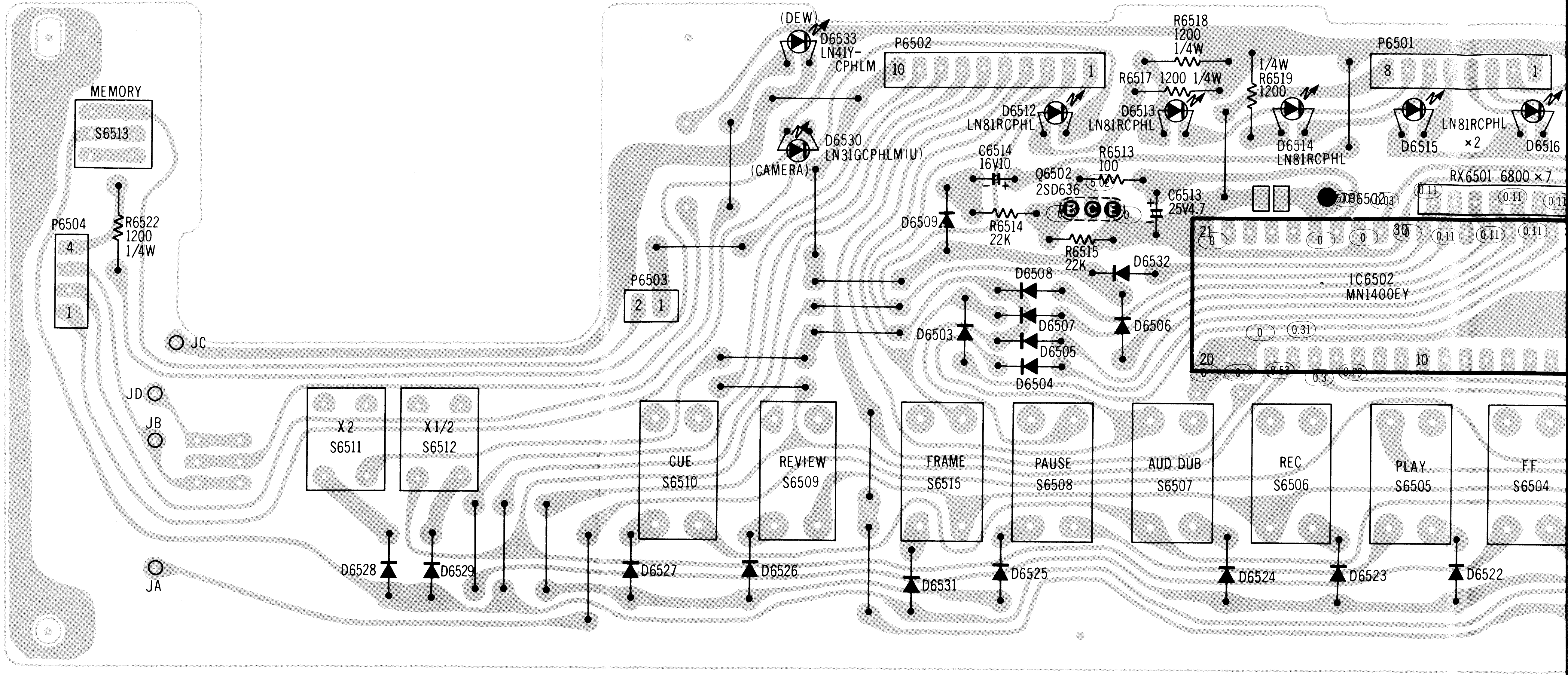
P6501 (Operation & Infrared C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	+12V	P6003-1 System Control
2	+5V	P6003-7 System Control
3	Rew	P6003-3 System Control
4	FF	P6003-2 System Control
5	Play	P6003-6 System Control
6	Rec	P6003-5 System Control
7	A-Dub	P6003-4 System Control
8	GND	P6003-8 System Control

P6502 (Operation & Infrared C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	Micon A0	P6007-8 System Control
2	Micon A1	P6007-7 System Control
3	Micon A3	P6007-5 System Control
4	Micon A2	P6007-6 System Control
5	Micon C0	P6007-4 System Control
6	Micon C3	P6007-1 System Control
7	Micon C2	P6007-2 System Control
8	Micon C1	P6007-3 System Control
9	Memory Count	P6007-9 System Control
10	—	— —

P6504 (Operation & Infrared C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	Pause	P6011-5 System Control
2	Dew	P6013-4 System Control
3	N.R. Sw	P4002-1 Luminance, Chrominance & Audio
4	Camera	P4002-2 Luminance, Chrominance & Audio

OPERATION BOARD (VEP06130A)

Operation C.B.A.	
Q6501	F-2
Q6502	D-3
IC6501	F-3
IC6502	E-2


MEMORY
S6513
P6504
4
1
R6522
1200
1/4W
JC
JD
JB
JA
(DEW)
D6533
LN41Y-CPHLM
D6530
LN31GCPHLM(U)
(CAMERA)
P6503
2 1
P6502
10
1
D6512
LN81RCPHL
D6513
LN81RCPHL
R6517 1200 1/4W
R6518
1200
1/4W
1/4W
R6519
1200
D6514
LN81RCPHL
D6515
LN81RCPHL
×2
D6516
P6501
8
1
C6514
16V10
Q6502
2SD636
R6513
100
C6513
25V4.7
R6514
22K
R6515
22K
D6509
D6508
D6507
D6506
D6505
D6504
D6503
D6532
IC6502
MN1400EY
RX6501 6800 ×7
21
30
20
10
X2
S6511
X1/2
S6512
CUE
S6510
REVIEW
S6509
FRAME
S6515
PAUSE
S6508
AUD DUB
S6507
REC
S6506
PLAY
S6505
FF
S6504
D6528
D6529
D6527
D6526
D6531
D6525
D6524
D6523
D6522
3
2
1
A
B
C
D
E

P7505

JD	1	DOLBY LED
JC	2	GND
	3	—
JA	4	CH REMOCON
JB	5	DOLBY SW

P6504

1	PAUSE
2	DEW
3	NR
4	CAMERA

P6503

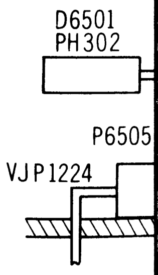
1	MEMORY COUNTER
2	MEMORY COUNTER

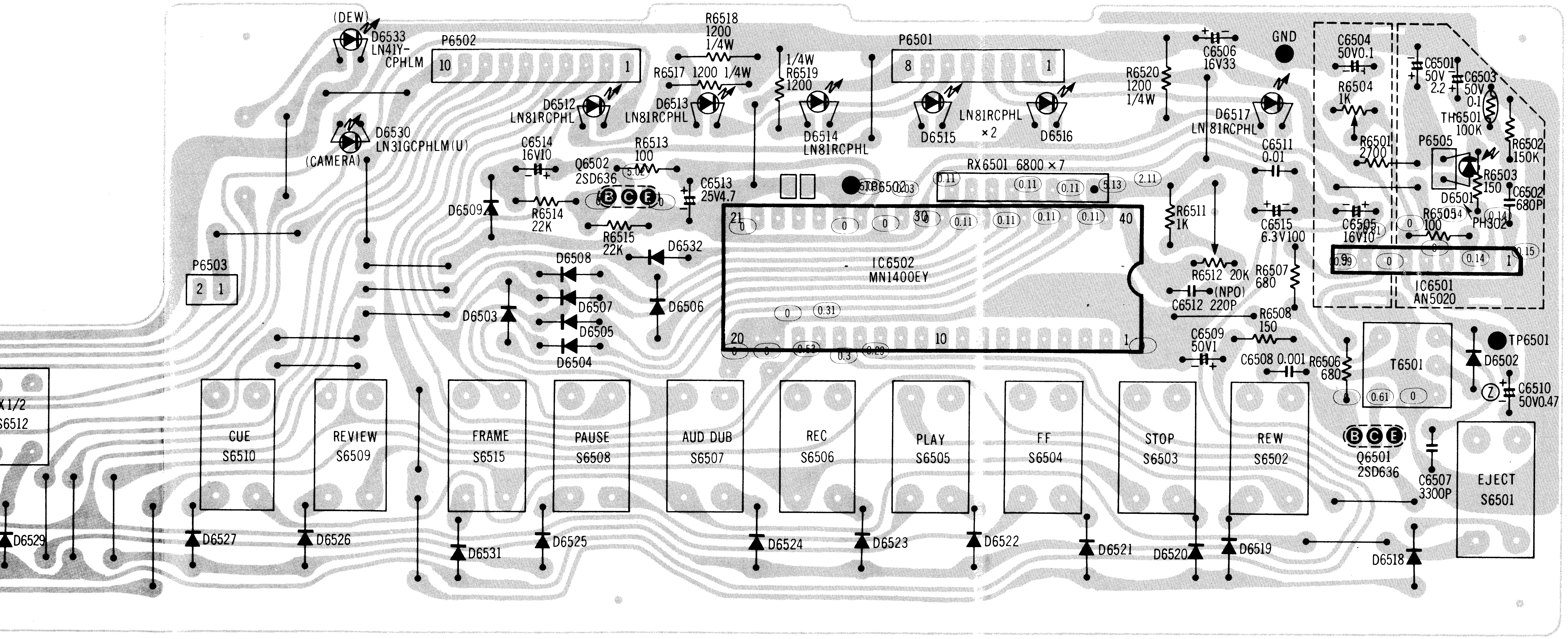
P6502

1	A ⌀
2	A 1
3	A 2
4	A 3
5	C ⌀
6	C 3
7	C 2
8	C 1
9	MEMORY COUNTER
10	—

P6501

1	+12V
2	+5V
3	REW
4	FF
5	PLAY
6	REC
7	A-DUB
8	GND


D6501
PH302
P6505
VJP1224


(DEW)
D6533
LN41Y-CPHLM
D6530
LN31GCPHLM(U)
(CAMERA)
P6502
10
1
R6518
1200
1/4W
R6517 1200 1/4W
1/4W
R6519
1200
P6501
8
1
R6520
1200
1/4W
C6506
16V33
GND
C6504
50V0.1
R6504
1K
C6501
50V
2.2
C6503
50V
0.1
TH6501
100K
R6502
150K
D6512
LN81RCPHL
D6513
LN81RCPHL
D6514
LN81RCPHL
D6515
LN81RCPHL
×2
D6516
D6517
LN81RCPHL
C6511
0.01
R6501
2700
P6505
R6503
150
D6501
C6502
680P
C6514
16V10
Q6502
2SD636
R6513
100
C6513
25V4.7
TP6502
RX6501 6800 × 7
D6509
R6514
22K
R6515
22K
R6511
1K
C6515
6.3V100
C6505
16V10
R6505
100
PH302
P6503
2 1
D6532
D6508
D6507
D6505
D6504
D6503
D6506
21
30
40
IC6502
MN1400EY
20
10
1
R6512 20K
R6507
680
IC6501
AN5020
C6512 220P
(NPO)
R6508
150
C6509
50V1
C6508 0.001
R6506
680
T6501
TP6501
D6502
C6510
50V0.47
X1/2
S6512
CUE
S6510
REVIEW
S6509
FRAME
S6515
PAUSE
S6508
AUD DUB
S6507
REC
S6506
PLAY
S6505
FF
S6504
STOP
S6503
REW
S6502
Q6501
2SD636
C6507
3300P
EJECT
S6501
D6529
D6527
D6526
D6531
D6525
D6524
D6523
D6522
D6521
D6520
D6519
D6518
B C E

AUSE
EW
R
AMERA

P6503

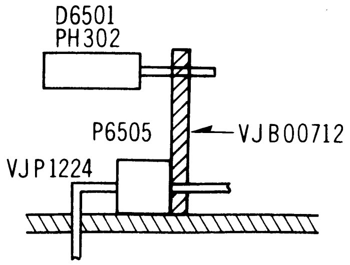
1	MEMORY COUNTER
2	MEMORY COUNTER

P6502

1	A φ
2	A 1
3	A 2
4	A 3
5	C φ
6	C 3
7	C 2
8	C 1
9	MEMORY COUNTER
10	——

P6501

1	+12V
2	+5V
3	REW
4	FF
5	PLAY
6	REC
7	A-DUB
8	GND


D6501
PH302
P6505
VJB00712
VJP1224

B C D E F G

SERVO & STILL BOARD (VEP02120A)

P2005

1	STILL Ⓗ
2	5V
3	X 9 Ⓗ
4	FRAME ADVANCE

P2003

1	X 1/2 X 9 Ⓗ
2	X 1/2 Ⓗ
3	X 9 Ⓛ
4	X 2 Ⓗ
5	PAUSE RESET

JC

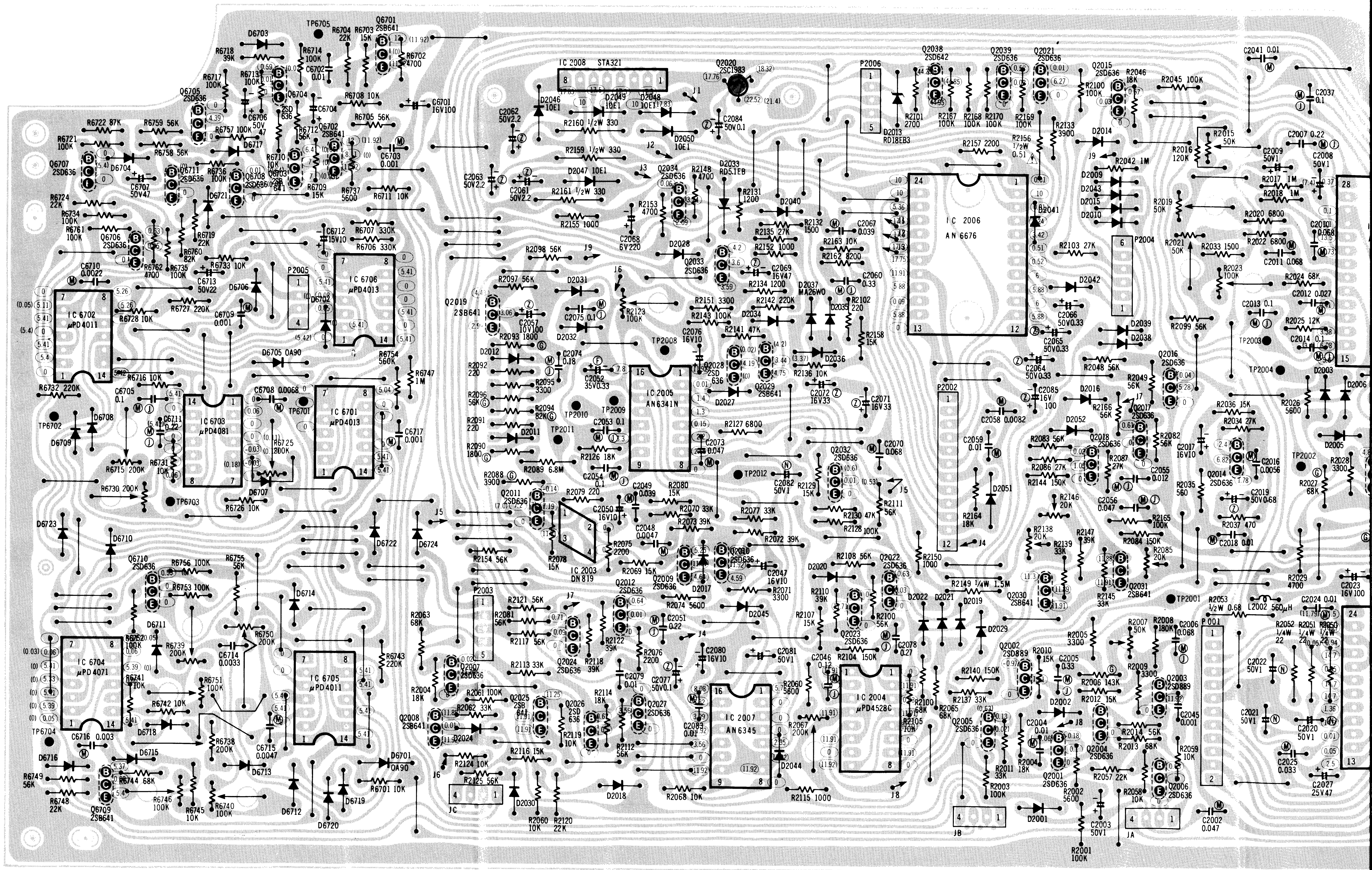
1	DOC IN
2	DOC OUT
3	TRACKING VR
4	TRACKING VR

JB

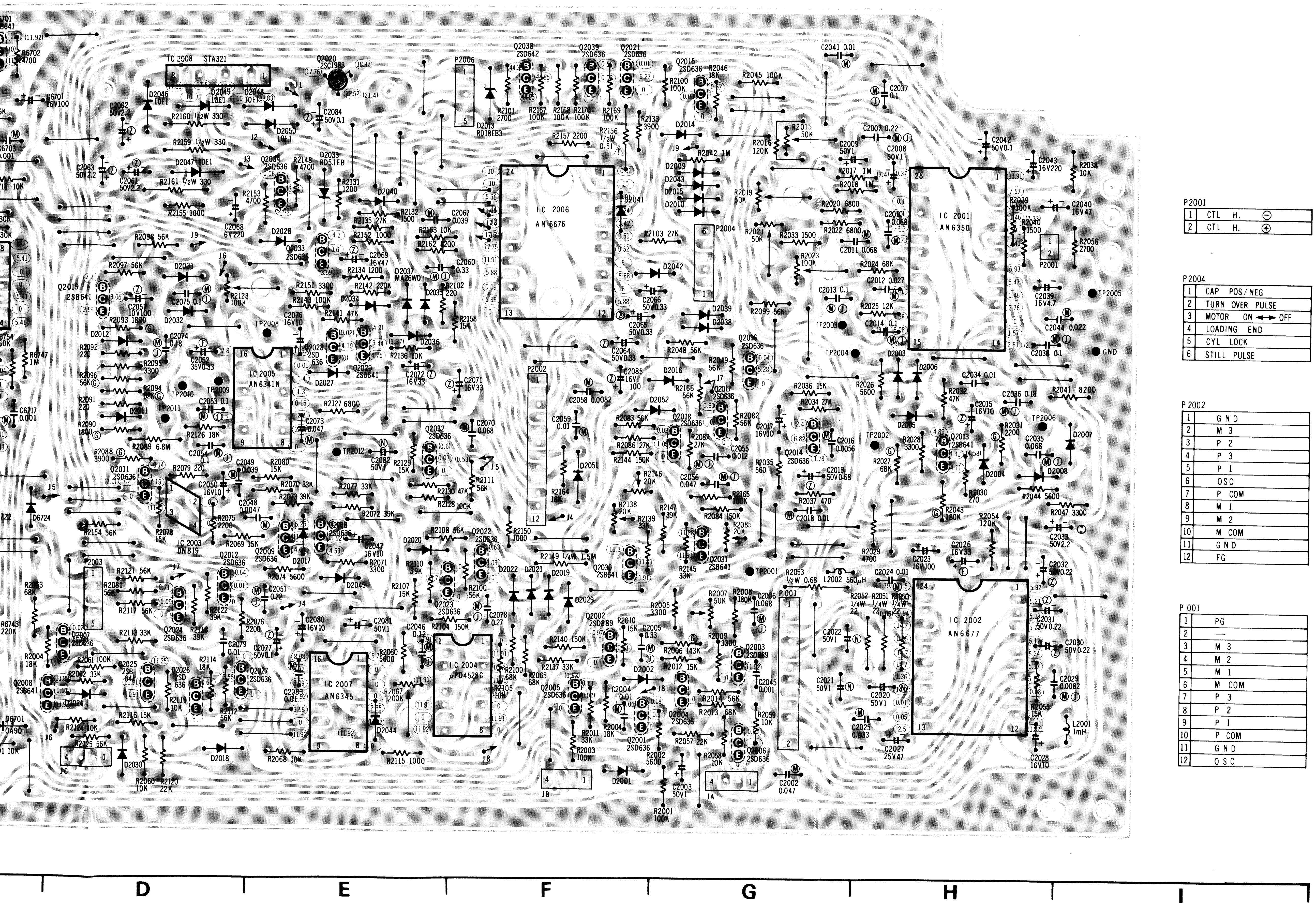
1	REC Ⓗ
2	TRICK PLAY Ⓗ
3	STILL V SYNC
4	GND

JA

1	REF 25Hz
2	SHORT PLAY Ⓛ
3	VSS OUT
4	SW PULS



5
4
3
2
1
A
B
C
D
E
F
G
IC 2008 STA321
IC 2006 AN 6676
IC 6702 μPD4011
IC 6703 μPD4081
IC 6706 μPD4013
IC 6701 μPD4013
IC 6704 μPD4071
IC 6705 μPD4011
IC 2005 AN6341N
IC 2003 DN 819
IC 2007 AN 6345
IC 2004 μPD4528C
Q6701 2SB641
Q2020 2SC1983
P2006
P2004
P2002
P2003
P2005
P001
TP6705
TP6702
TP6701
TP6703
TP6704
TP2008
TP2010
TP2011
TP2009
TP2012
TP2003
TP2004
TP2002
TP2001
JC
JB
JA
L2002 560μH


IC 2001 AN6350
IC 2002 AN6677
IC 2003 DN819
IC 2004 μPD4528C
IC 2005 AN6341N
IC 2006 AN6676
IC 2007 AN6345
IC 2008 STA321
P2001
P2002
P2004
P2006
P 001
JA
JB
JC
TP2001
TP2002
TP2003
TP2004
TP2005
TP2006
TP2008
TP2009
TP2010
TP2011
TP2012
GND
D
E
F
G
H
I

P2001

1	CTL H. ⊖
2	CTL H. ⊕

P2004

1	CAP POS/NEG
2	TURN OVER PULSE
3	MOTOR ON ←→ OFF
4	LOADING END
5	CYL LOCK
6	STILL PULSE

P 2002

1	GND
2	M 3
3	P 2
4	P 3
5	P 1
6	OSC
7	P COM
8	M 1
9	M 2
10	M COM
11	GND
12	FG

P 001

1	PG
2	—
3	M 3
4	M 2
5	M 1
6	M COM
7	P 3
8	P 2
9	P 1
10	P COM
11	GND
12	OSC

Servo & Still C.B.A.	
Q2001	F-1
Q2002	F-2
Q2003	G-2
Q2004	G-1
Q2005	F-1
Q2006	G-1
Q2007	D-1
Q2008	D-1
Q2009	E-2
Q2010	E-2
Q2011	D-2
Q2012	D-2
Q2013	H-3
Q2014	G-3
Q2015	G-4
Q2016	G-3
Q2017	G-3
Q2018	G-3
Q2019	D-3
Q2020	E-4
Q2021	F-4
Q2022	F-2
Q2023	F-2
Q2024	D-2
Q2025	D-1
Q2026	D-1
Q2027	D-2
Q2028	E-3
Q2029	E-3
Q2030	F-2
Q2031	G-2
Q2032	E-3
Q2033	E-4
Q2034	E-4
Q2038	F-4
Q2039	F-4
Q6701	C-4
Q6702	C-4
Q6703	C-4
Q6704	C-4
Q6705	B-4
Q6706	B-4
Q6707	B-4
Q6708	C-4
Q6709	B-1
Q6710	B-2
Q6711	B-4
IC2001	H-4
IC2002	H-2
IC2003	D-2
IC2004	F-1
IC2005	E-3
IC2006	F-4
IC2007	E-1
IC2008	D-4
IC6701	C-3
IC6702	B-3
IC6703	B-3
IC6704	B-2
IC6705	C-2
IC6706	C-3

JA (Servo & Still C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION	
a	Ref 25Hz	JA-a	Luminance, Chrominance & Audio
b	Short Play (L)	JA-b	Luminance, Chrominance & Audio
c	Vss Out	JA-c	Luminance, Chrominance & Audio
d	Sw Pulse	JA-d	Luminance, Chrominance & Audio

JB (Servo & Still C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION	
a	Rec (H)	JB-a	Luminance, Chrominance & Audio
b	Track Play (H)	JB-b	Luminance, Chrominance & Audio
c	Still V-sync	JB-c	Luminance, Chrominance & Audio
d	GND	JB-d	Luminance, Chrominance & Audio

JC (Servo & Still C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION	
a	D.O.C. In	JC-a	Luminance, Chrominance & Audio
b	D.O.C. Out	JC-b	Luminance, Chrominance & Audio
c	TR VR	JC-c	Luminance, Chrominance & Audio
d	TR VR	JC-d	Luminance, Chrominance & Audio

P2003 (Servo & Still C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION	
1	1/2 ×9 (H)	P6011-6	System Control
2	×1/2 (H)	P6008-2	System Control
3	Delayed ×9 (L)	P6011-1	System Control
4	×2 (H)	P6008-4	System Control
5	Pause Reset	P6011-3	System Control

P2004 (Servo & Still C.B.A)

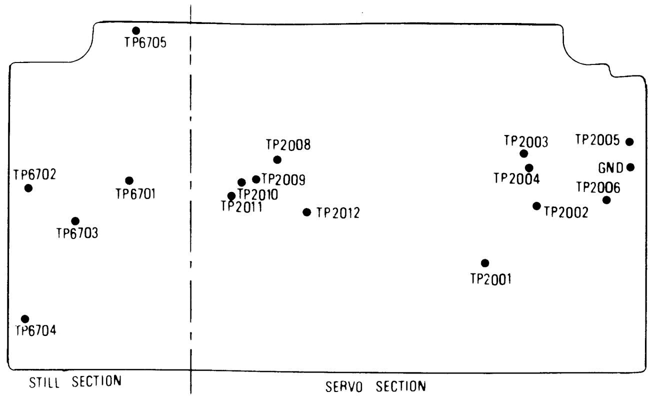
PIN NO.	SIGNAL NAME	DESTINATION	
1	Cap Pos/Neg	P6005-3	System Control
2	Turn Over Pulse	P6005-2	System Control
3	Motor ON	P6005-4	System Control
4	Loading END	P6011-2	System Control
5	Cyl Lock	P6005-5	System Control
6	Still Pause	P6011-4	System Control

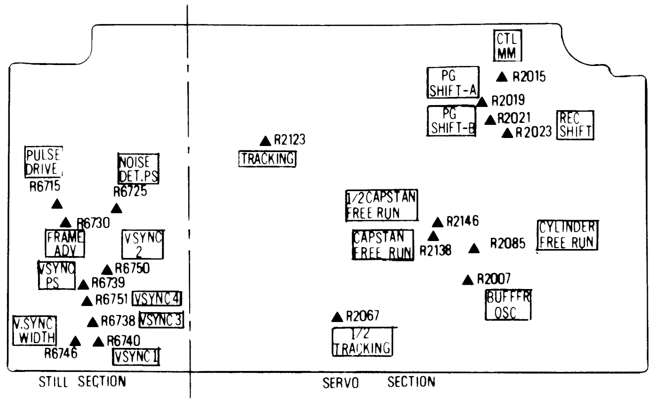
P2005 (Servo & Still C.B.A)

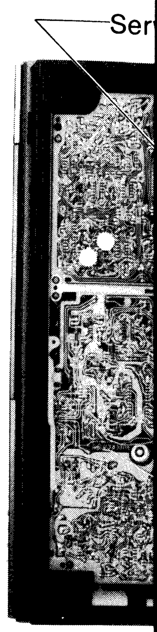
PIN NO.	SIGNAL NAME	DESTINATION	
1	Still (H)	P6008-8	System Control
2	+5V	P6008-1	System Control
3	×9 (H)	P6008-7	System Control
4	Frame A.D.	P6008-5	System Control

P2006 (Servo & Still C.B.A)

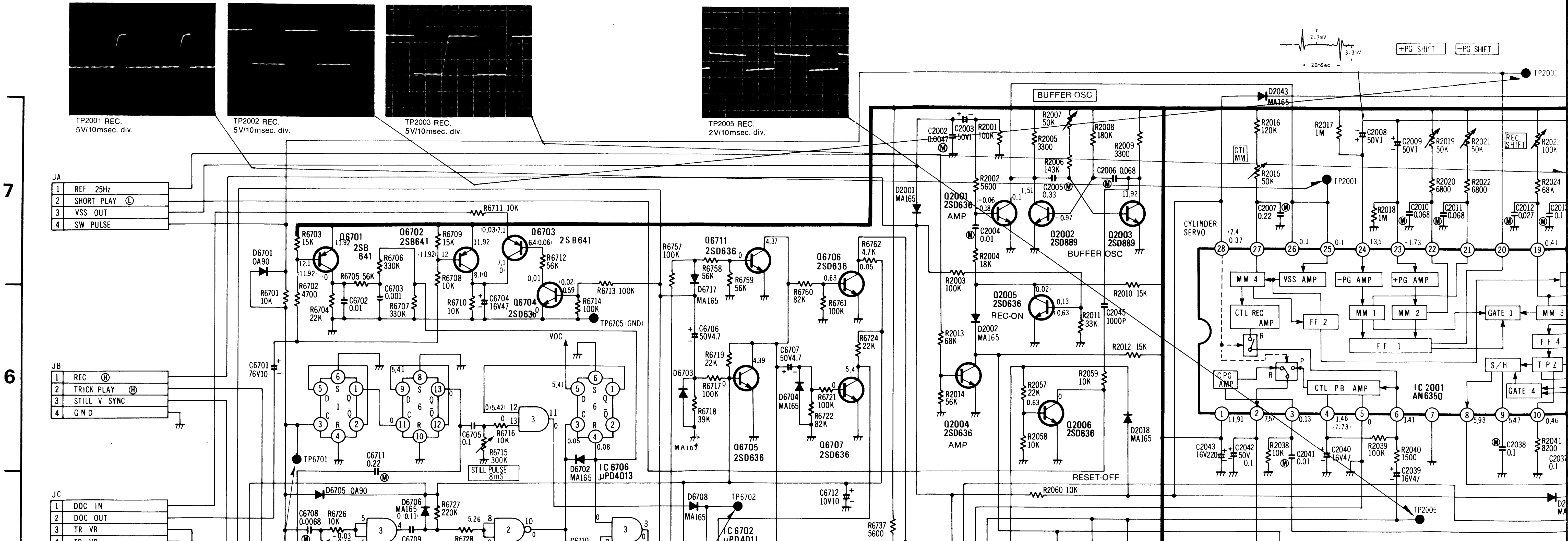
PIN NO.	SIGNAL NAME	DESTINATION	
1	Unreg 20V	P1003-3	Power Supply
2	Reg 45V	P1003-5	Power Supply
3	+12V	P1003-4	Power Supply
4	GND	P1003-2	Power Supply
5	Unreg 13V	P1003-1	Power Supply

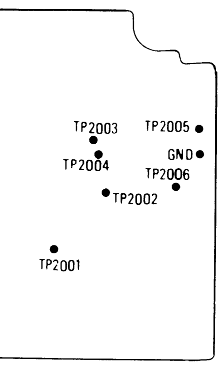

TP6705
TP6702
TP6701
TP6703
TP6704
TP2008
TP2009
TP2010
TP2011
TP2012
TP2003
TP2004
TP2005
GND
TP2006
TP2002
TP2001
STILL SECTION
SERVO SECTION


CTL MM
R2015
PG SHIFT-A
R2019
PG SHIFT-B
R2021
R2023
REC SHIFT
R2123
TRACKING
PULSE DRIVE
R6715
NOISE DET.PS
R6725
R6730
FRAME ADV
VSYNC 2
1/2 CAPSTAN FREE RUN
CAPSTAN FREE RUN
R2146
R2138
R2085
CYLINDER FREE RUN
VSYNC PS
R6739
R6750
R6751
VSYNC 4
R2007
BUFFER OSC
V.SYNC WIDTH
R6746
R6738
VSYNC 3
R6740
VSYNC 1
R2067
1/2 TRACKING
STILL SECTION
SERVO SECTION

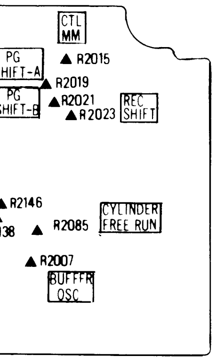


SERVO & STILL SCHEMATIC DIAGRAM

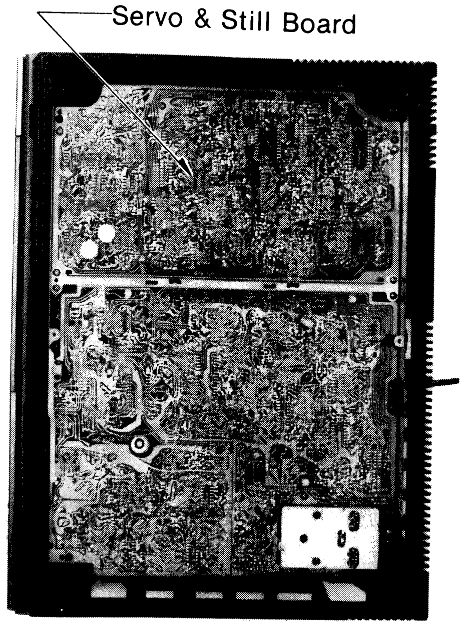

TP2001 REC.
5V/10msec. div.
TP2002 REC.
5V/10msec. div.
TP2003 REC.
5V/10msec. div.
TP2005 REC.
2V/10msec. div.
+PG SHIFT
-PG SHIFT
20mSec.
JA
REF 25Hz
SHORT PLAY Ⓛ
VSS OUT
SW PULSE
JB
REC Ⓗ
TRICK PLAY Ⓗ
STILL V SYNC
GND
JC
DOC IN
DOC OUT
TR VR
7
6
Q6701 2SB641
Q6702 2SB641
Q6703 2SB641
Q6704 2SD636
Q6705 2SD636
Q6706 2SD636
Q6707 2SD636
Q6711 2SD636
IC6706 μPD4013
IC6702 μPD4011
STILL PULSE 8mS
TP6701
TP6702
TP6705 (GND)
BUFFER OSC
Q2001 2SD636 AMP
Q2002 2SD889
Q2003 2SD889
Q2004 2SD636 AMP
Q2005 2SD636 REC-ON
Q2006 2SD636
RESET-OFF
CYLINDER SERVO
MM 4
VSS AMP
-PG AMP
+PG AMP
CTL REC AMP
FF 2
MM 1
MM 2
GATE 1
MM 3
FF 1
FF 4
S/H
TPZ
GATE 4
CPG AMP
CTL PB AMP
IC 2001 AN6350
REC SHIFT
TP2001
TP2005



TP2003
TP2005
TP2004
GND
TP2006
TP2002
TP2001

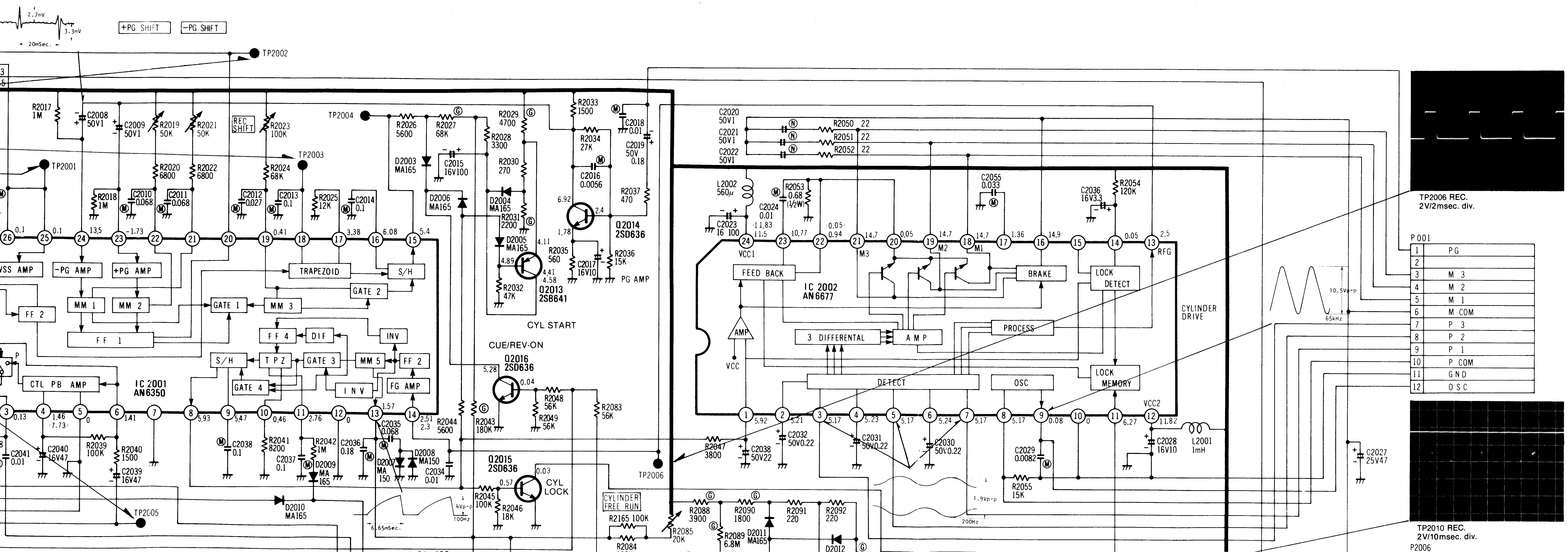


CTL MM
PG SHIFT-A
R2015
R2019
PG SHIFT-B
R2021
R2023
REC SHIFT
R2146
CYLINDER FREE RUN
R2085
R2007
BUFFER OSC

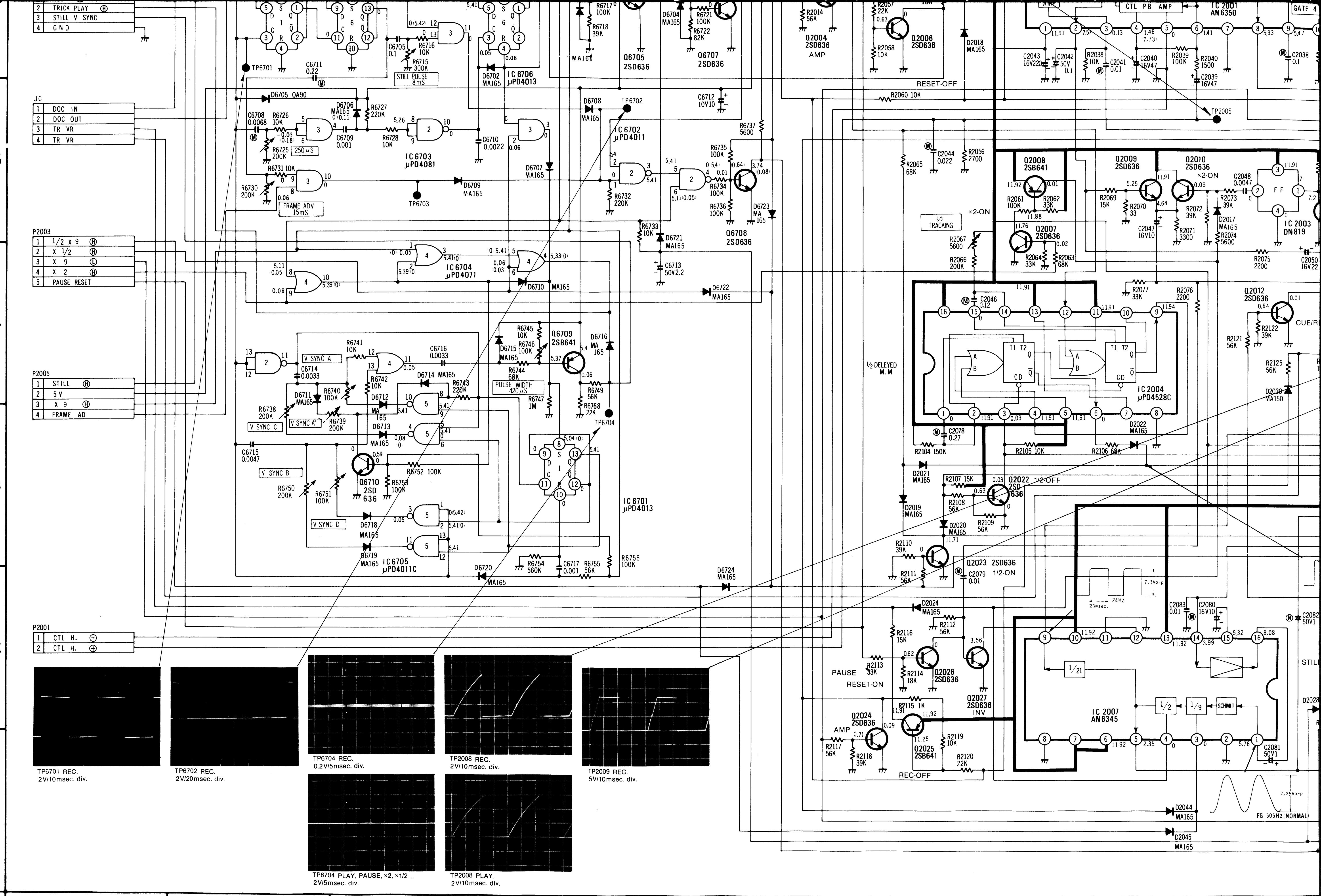


Servo & Still Board

Servo & Still C.B.A			
Q2001	F-7	Q2029	I-2
Q2002	F-7	Q2030	J-2
Q2003	F-7	Q2031	J-2
Q2004	F-6	Q2032	J-3
Q2005	F-6	Q2033	K-1
Q2006	F-6	Q2034	K-1
Q2007	G-5	Q2038	L-5
Q2008	G-5	Q2039	L-4
Q2009	H-5	Q6701	B-7
Q2010	H-5	Q6702	C-7
Q2011	I-5	Q6703	C-7
Q2012	H-4	Q6704	C-6
Q2013	J-7	Q6705	D-6
Q2014	J-7	Q6706	E-7
Q2015	J-5	Q6707	E-6
Q2016	J-6	Q6708	E-5
Q2017	J-5	Q6709	D-4
Q2018	J-5	Q6710	C-3
Q2019	K-5	Q6711	E-7
Q2020	L-4		
Q2021	M-5	IC2001	H-6
Q2022	G-3	IC2002	L-6
Q2023	F-3	IC2003	H-5
Q2024	F-1	IC2004	G-4
Q2025	F-2	IC2005	J-4
Q2026	F-2	IC2006	L-2
Q2027	F-2	IC2007	G-2
Q2028	I-1	IC2008	L-4



+PG SHIFT
-PG SHIFT
TP2002
TP2004
TP2003
TP2001
TP2005
TP2006
REC SHIFT
IC 2001
AN6350
PG AMP
-PG AMP
+PG AMP
MM 1
MM 2
MM 3
FF 1
FF 2
FF 4
GATE 1
GATE 2
GATE 3
GATE 4
TRAPEZOID
S/H
DIF
INV
TPZ
MM 5
I N V
CTL PB AMP
FG AMP
Q2013
2SB641
Q2014
2SD636
CYL START
CUE/REV-ON
Q2016
2SD636
Q2015
2SD636
CYL LOCK
CYLINDER FREE RUN
IC 2002
AN6677
FEED BACK
AMP
3 DIFFERENTIAL
A M P
BRAKE
LOCK DETECT
PROCESS
DETECT
OSC
LOCK MEMORY
VCC1
VCC2
RFG
M3
M2
M1
CYLINDER DRIVE
TP2006 REC.
2V/2msec. div.
TP2010 REC.
2V/10msec. div.
P001
1 PG
2
3 M 3
4 M 2
5 M 1
6 M COM
7 P 3
8 P 2
9 P 1
10 P COM
11 GND
12 OSC
P2006



JC
1 DOC IN
2 DOC OUT
3 TR VR
4 TR VR
2 TRICK PLAY Ⓗ
3 STILL V SYNC
4 GND
P2003
1 1/2 x 9 Ⓗ
2 x 1/2 Ⓗ
3 x 9 Ⓛ
4 x 2 Ⓗ
5 PAUSE RESET
P2005
1 STILL Ⓗ
2 5V
3 x 9 Ⓗ
4 FRAME AD
P2001
1 CTL H. ⊖
2 CTL H. ⊕
IC 6701 μPD4013
IC 6702 μPD4011
IC 6703 μPD4081
IC 6704 μPD4071
IC 6705 μPD4011C
IC 6706 μPD4013
IC 2001 AN6350
IC 2003 DN819
IC 2004 μPD4528C
IC 2007 AN6345
Q6705 2SD636
Q6707 2SD636
Q6708 2SD636
Q6709 2SB641
Q6710 2SD636
Q2004 2SD636 AMP
Q2006 2SD636
Q2007 2SD636
Q2008 2SB641
Q2009 2SD636
Q2010 2SD636
Q2012 2SD636
Q2022 2SD636
Q2023 2SD636
Q2024 2SD636
Q2025 2SB641
Q2026 2SD636
Q2027 2SD636 INV
TP6701
TP6702
TP6703
TP6704
TP2005
STILL PULSE 8mS
250μS
FRAME ADV 15mS
PULSE WIDTH 420μS
V SYNC A
V SYNC A'
V SYNC B
V SYNC C
V SYNC D
1/2 TRACKING
×2-ON
1/2 DELEYED M.M
RESET-OFF
PAUSE RESET-ON
REC-OFF
1/2-OFF
1/2-ON
CTL PB AMP
GATE
CUE/RE
STILL
FF
SCHMIT
7.3Vp-p
24Hz
23msec.
2.25Vp-p
FG 505Hz(NORMAL)
1
2
3
4
5
A
B
C
D
E
F
G
H

TP6701 REC.
2V/10msec. div.

TP6702 REC.
2V/20msec. div.

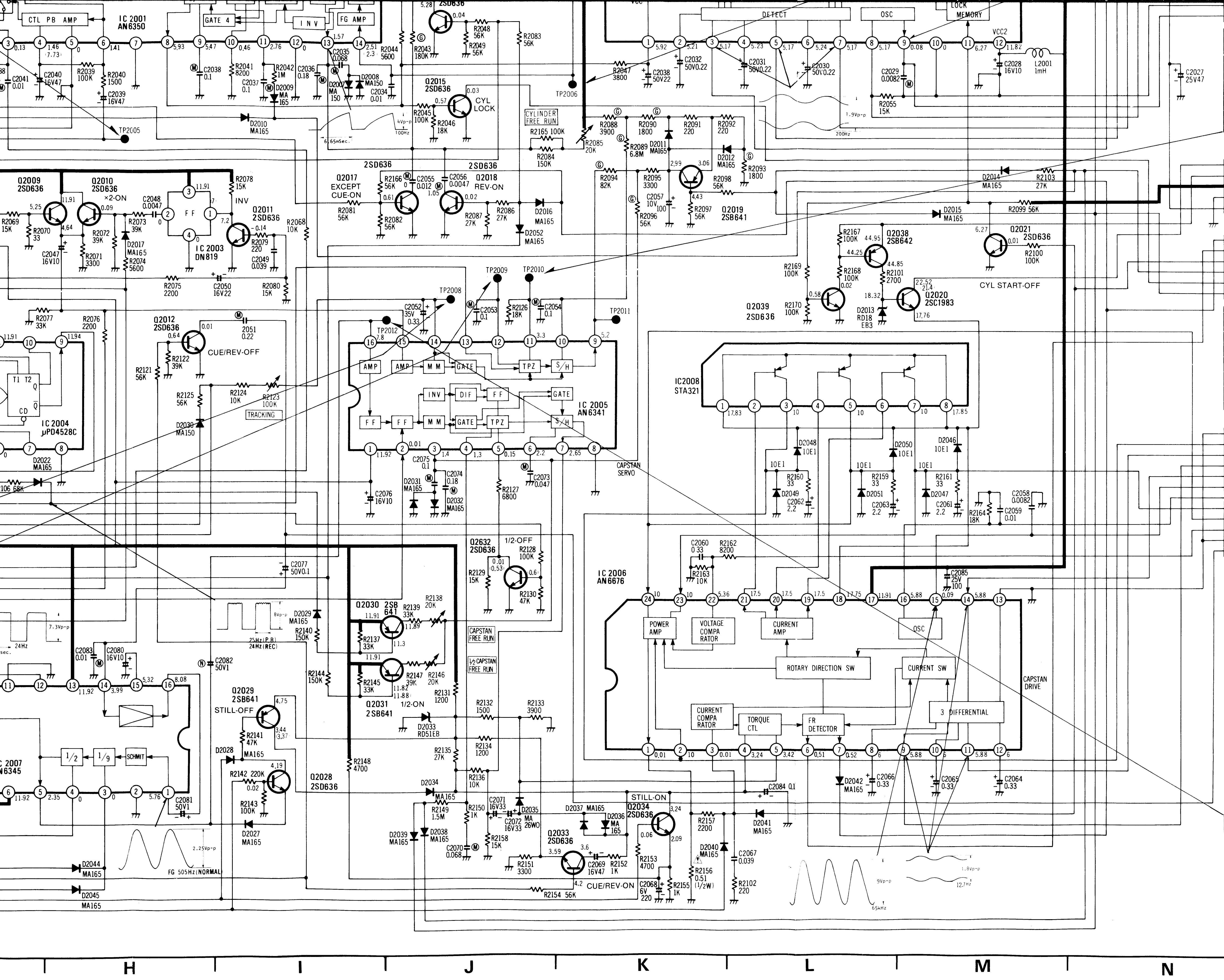
TP6704 REC.
0.2V/5msec. div.

TP2008 REC.
2V/10msec. div.

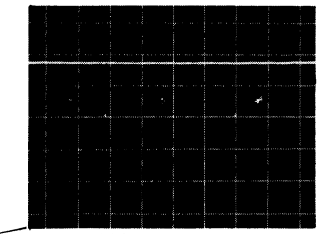
TP2009 REC.
5V/10msec. div.

TP6704 PLAY, PAUSE, ×2, ×1/2 .
2V/5msec. div.

TP2008 PLAY.
2V/10msec. div.


IC 2001
AN6350
CTL PB AMP
GATE 4
INV
FG AMP
TP2005
TP2006
Q2015
2SD636
CYL LOCK
CYLINDER FREE RUN
DETECT
OSC
LOCK MEMORY
VCC2
L2001 1mH
Q2009
2SD636
Q2010
2SD636
×2-ON
FF
INV
IC 2003
DN819
Q2011
2SD636
Q2017
EXCEPT CUE-ON
Q2018
REV-ON
Q2019
2SB641
D2014 MA165
D2015 MA165
Q2021
2SD636
CYL START-OFF
Q2038
2SB642
Q2039
2SD636
Q2020
2SC1983
D2013 RD18 EB3
TP2009
TP2010
TP2008
TP2011
TP2012
Q2012
2SD636
CUE/REV-OFF
IC 2004
μPD4528C
TRACKING
IC 2005
AN6341
AMP
MM
GATE
TPZ
S/H
DIF
FF
CAPSTAN SERVO
IC2008
STA321
Q2632
2SD636
1/2-OFF
CAPSTAN FREE RUN
1/2 CAPSTAN FREE RUN
Q2030 2SB641
Q2031
2SB641
1/2-ON
Q2029
2SB641
STILL-OFF
Q2028
2SD636
IC 2007
AN6345
1/2
1/9
SCHMIT
FG 505Hz(NORMAL)
2.25Vp-p
7.3Vp-p
24Hz
25Hz(P,R)
24Hz(REC)
Q2033
2SD636
CUE/REV-ON
Q2034
2SD636
STILL-ON
IC 2006
AN6676
POWER AMP
VOLTAGE COMPA RATOR
CURRENT AMP
ROTARY DIRECTION SW
CURRENT SW
OSC
CURRENT COMPA RATOR
TORQUE CTL
FR DETECTOR
3 DIFFERENTIAL
CAPSTAN DRIVE
9Vp-p
65kHz
1.8Vp-p
12.7Hz
H
I
J
K
L
M
N
O

11	GND
12	OSC

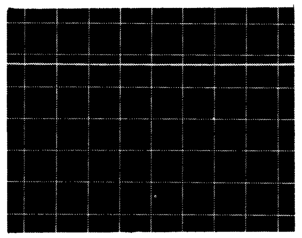

TP2010 REC.
2V/10msec. div.

P2006

1	UNREG 20V
2	REG 45V
3	12V
4	GND
5	UNREG 13V

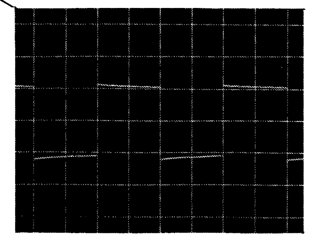
P2004

1	CAP POS. / NEG.
2	TURN OVER PULSE
3	MOTOR ON ◄► OFF
4	LOADING END
5	CYL LOCK
6	STILL PULSE

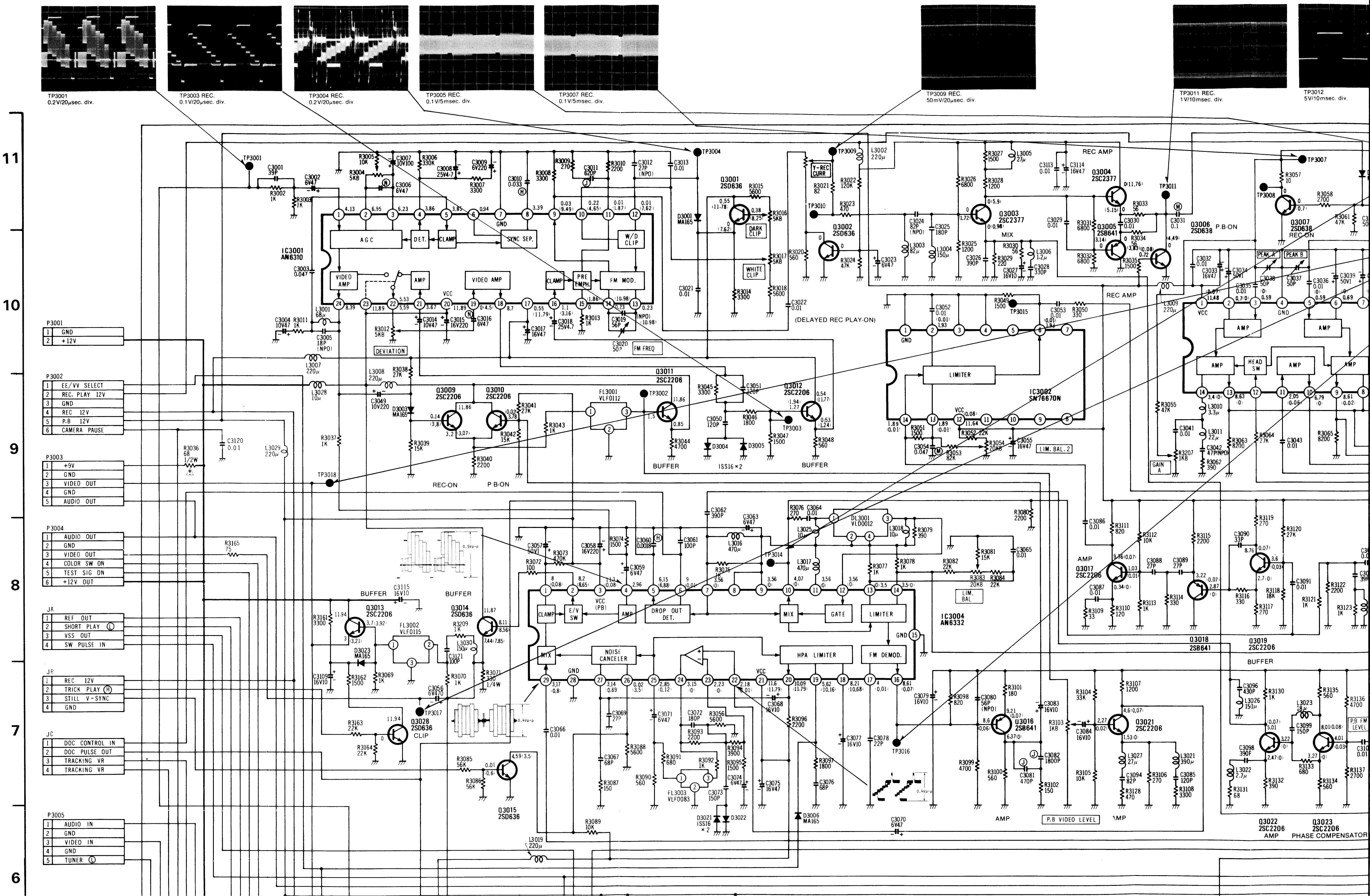

TP2010 PLAY.
2V/10msec. div.

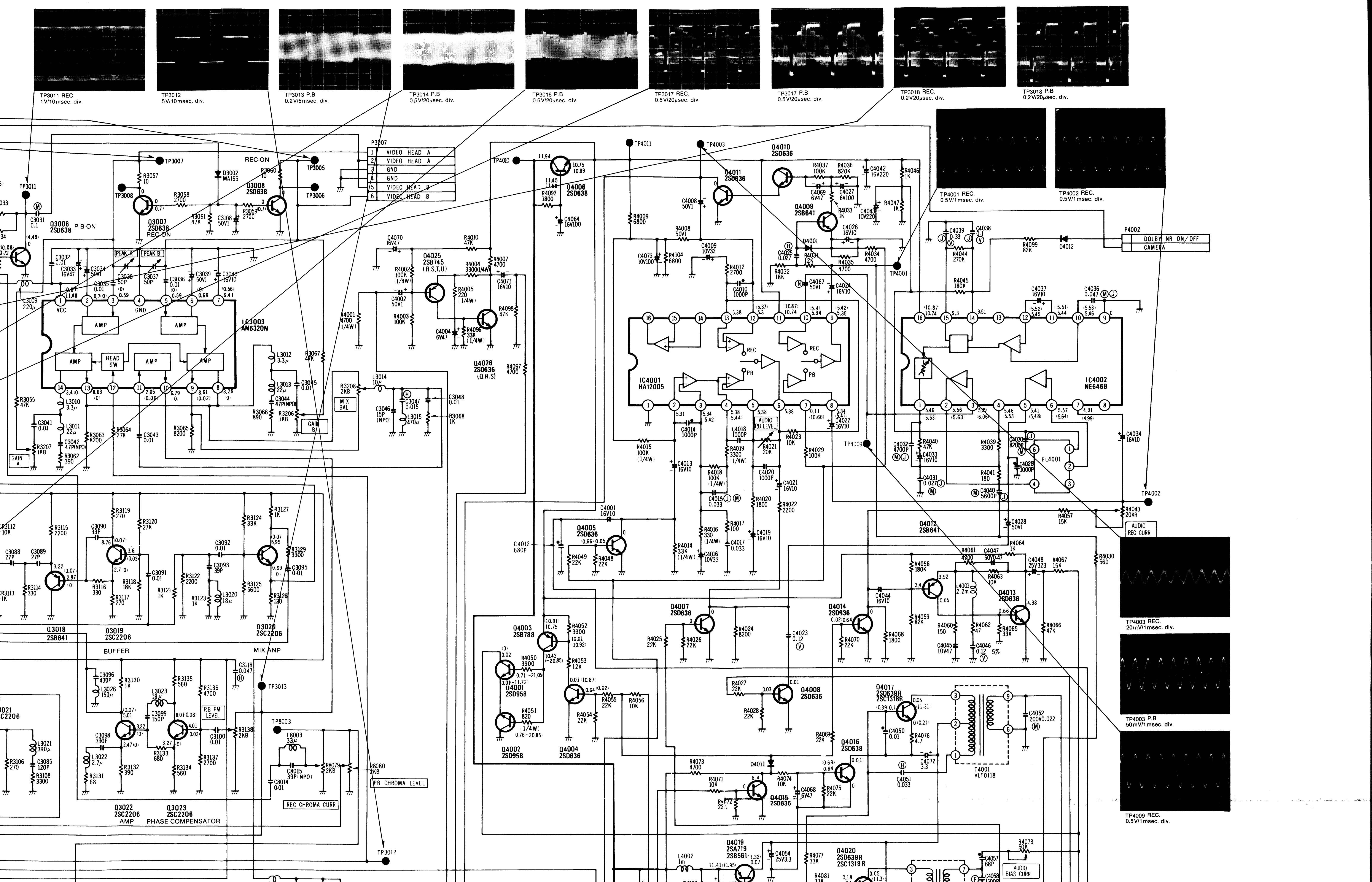
P2002

1	GND
2	M 3
3	P 2
4	P 3
5	P 1
6	OSC
7	P COM
8	M 1
9	M 2
10	M COM
11	GND
12	FG


TP2012 REC.
2V/0.5msec. div.

LUMINANCE, CHROMINANCE & AUDIO SCHEMATIC DIAGRAM


TP3001 0.2V/20μsec. div.
TP3003 REC. 0.1V/20μsec. div.
TP3004 REC. 0.2V/20μsec. div
TP3005 REC. 0.1V/5msec. div.
TP3007 REC. 0.1V/5msec. div.
TP3009 REC. 50mV/20μsec. div.
TP3011 REC. 1V/10msec. div.
TP3012 5V/10msec. div.
11
10
9
8
7
6
P3001
1 GND
2 +12V
P3002
1 EE/VV SELECT
2 REC. PLAY 12V
3 GND
4 REC 12V
5 P.B 12V
6 CAMERA PAUSE
P3003
1 +9V
2 GND
3 VIDEO OUT
4 GND
5 AUDIO OUT
P3004
1 AUDIO OUT
2 GND
3 VIDEO OUT
4 COLOR SW ON
5 TEST SIG ON
6 +12V OUT
JA
1 REF OUT
2 SHORT PLAY Ⓛ
3 VSS OUT
4 SW PULSE IN
JB
1 REC 12V
2 TRICK PLAY Ⓗ
3 STILL V-SYNC
4 GND
JC
1 DOC CONTROL IN
2 DOC PULSE OUT
3 TRACKING VR
4 TRACKING VR
P3005
1 AUDIO IN
2 GND
3 VIDEO IN
4 GND
5 TUNER Ⓛ
IC3001 AN6310
AGC
DET.
CLAMP
SYNC SEP.
W/D CLIP
VIDEO AMP
AMP
VIDEO AMP
CLAMP
PRE EMPH.
FM MOD.
DEVIATION
FM FREQ
Q3001 2SD636
DARK CLIP
WHITE CLIP
Q3002 2SD636
Y-REC CURR
(DELAYED REC PLAY-ON)
Q3003 2SC2377
MIX
Q3004 2SC2377
Q3005 2SB641
REC AMP
Q3006 2SD638 P.B.ON
Q3007 2SD638 REC-ON
IC3002 SN76670N
LIMITER
LIM. BAL. 2
PEAK A
PEAK B
AMP
HEAD SW
GAIN A
Q3009 2SC2206
Q3010 2SC2206
REC-ON
P.B-ON
FL3001 VLF0112
Q3011 2SC2206
BUFFER
Q3012 2SC2206
BUFFER
ISS16 ×2
IC3004 AN6332
CLAMP
E/V SW
AMP
DROP OUT DET.
MIX
GATE
LIMITER
MIX
NOISE CANCELER
HPA LIMITER
FM DEMOD.
DL3001 VLD0012
LIM. BAL
Q3013 2SC2206
BUFFER
FL3002 VLF0115
Q3014 2SD636
BUFFER
Q3028 2SD636 CLIP
Q3015 2SD636
FL3003 VLF0083
Q3016 2SB641
Q3017 2SC2206
AMP
Q3018 2SB641
Q3019 2SC2206
BUFFER
Q3021 2SC2206
AMP
P.B VIDEO LEVEL
Q3022 2SC2206 AMP
Q3023 2SC2206 PHASE COMPENSATOR
P.B FM LEVEL


TP3011 REC. 1V/10msec. div.

TP3012 5V/10msec. div.

TP3013 P.B 0.2V/5msec. div.

TP3014 P.B 0.5V/20μsec. div.

TP3016 P.B 0.5V/20μsec. div.

TP3017 REC. 0.5V/20μsec. div.

TP3017 P.B 0.5V/20μsec. div.

TP3018 REC. 0.2V20μsec. div.

TP3018 P.B 0.2V/20μsec. div.

TP4001 REC. 0.5V/1msec. div.

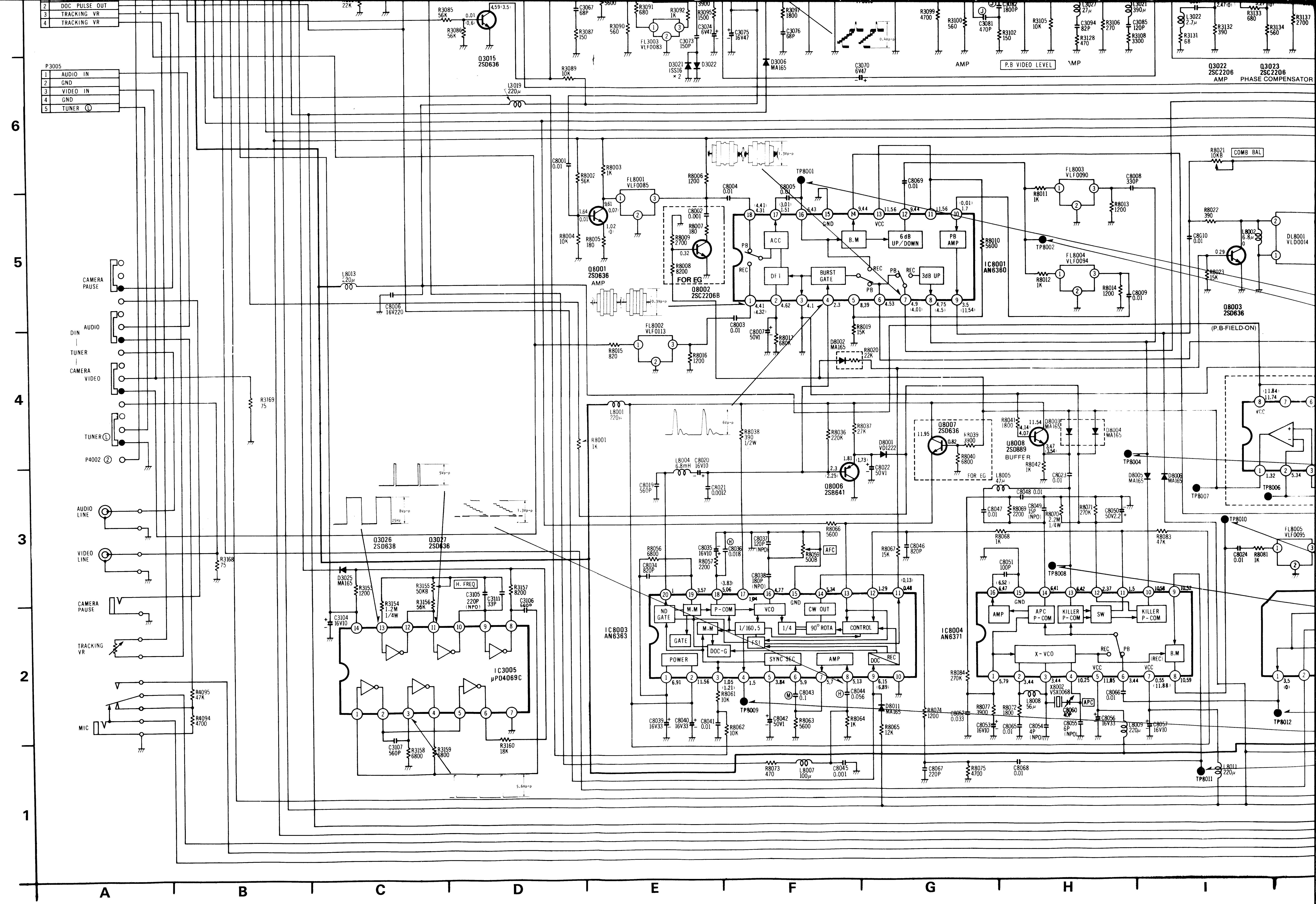
TP4002 REC. 0.5V/1msec. div.

TP4003 REC. 20mV/1msec. div.

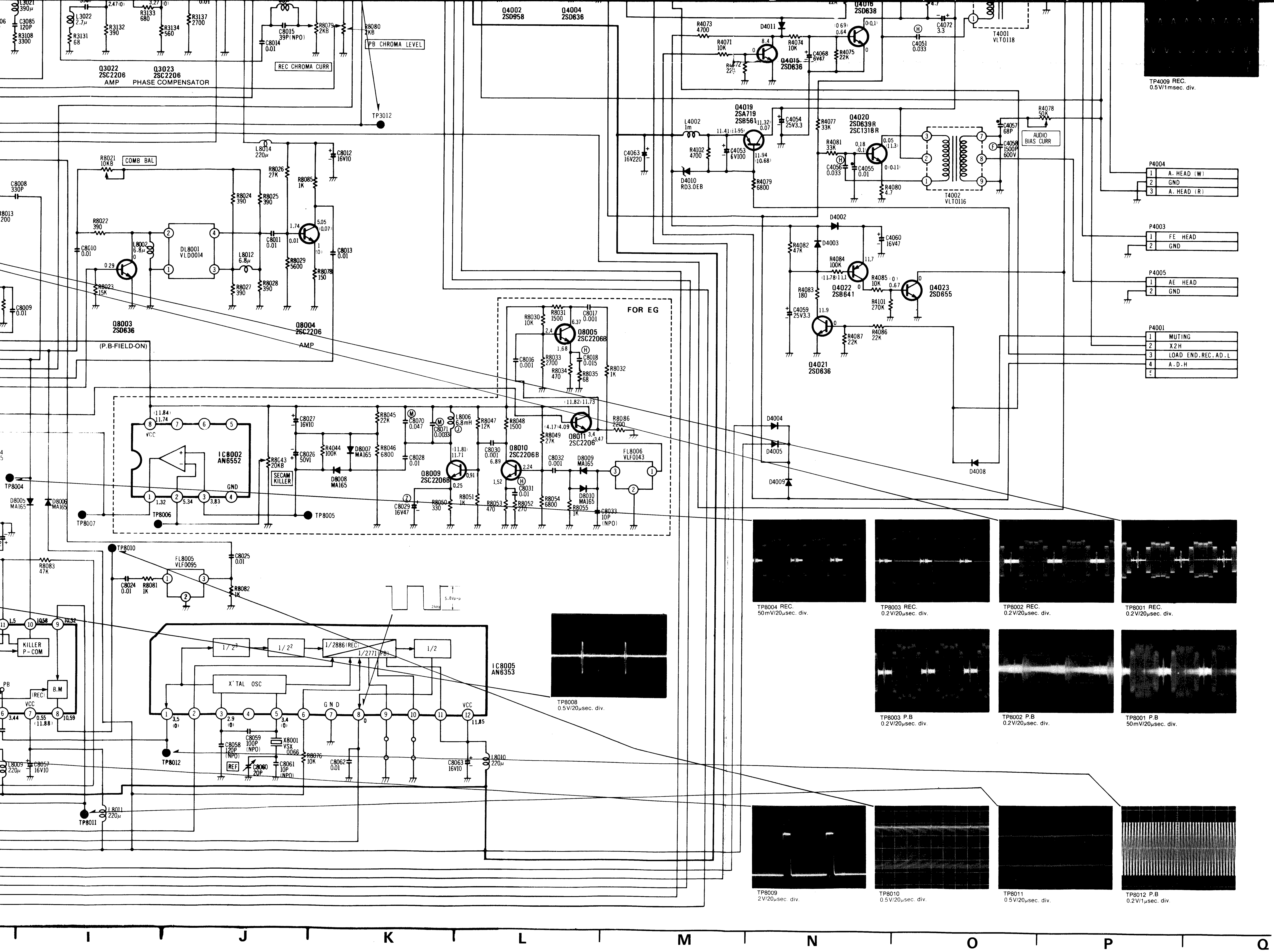
TP4003 P.B 50mV/1msec. div.

TP4009 REC. 0.5V/1msec. div.

P3007
VIDEO HEAD A
VIDEO HEAD A
GND
GND
VIDEO HEAD B
VIDEO HEAD B
TP3007
TP3005
TP3006
TP3008
TP3011
REC-ON
Q3006 2SD638 P.B-ON
Q3007 2SD638 REC-ON
Q3008 2SD638
D3002 MA165
PEAK A
PEAK B
IC3003 AN6320N
AMP
HEAD SW
VCC
GND
GAIN A
GAIN B
MIX BAL
Q3018 2SB641
Q3019 2SC2206
Q3020 2SC2206
BUFFER
MIX ANP
TP3013
TP8003
Q3021 2SC2206
Q3022 2SC2206 AMP
Q3023 2SC2206 PHASE COMPENSATOR
P.B FM LEVEL
PB CHROMA LEVEL
REC CHROMA CURR
TP3012
Q4025 2SB745 (R.S.T.U)
Q4026 2SD636 (Q.R.S)
TP4010
TP4011
TP4003
Q4006 2SD638
Q4010 2SD636
Q4011 2SD636
Q4009 2SB641
D4001
IC4001 HA12005
REC
PB
AUDIO PB LEVEL
TP4001
TP4009
IC4002 NE646B
FL4001
P4002
DOLBY NR ON/OFF
CAMERA
D4012
TP4002
AUDIO REC CURR
Q4012 2SB641
Q4005 2SD636
Q4013 2SD636
Q4007 2SD636
Q4014 2SD636
Q4003 2SB788
Q4001 2SD958
Q4002 2SD958
Q4004 2SD636
Q4008 2SD636
Q4017 2SD639R 2SC1318R
Q4016 2SD638
Q4015 2SD636
D4011
T4001 VLT0118
Q4019 2SA719 2SB561
Q4020 2SD639R 2SC1318R
L4002
AUDIO BIAS CURR



2 DOC PULSE OUT
3 TRACKING VR
4 TRACKING VR
P3005
1 AUDIO IN
2 GND
3 VIDEO IN
4 GND
5 TUNER Ⓛ
CAMERA PAUSE
DIN AUDIO
TUNER
CAMERA VIDEO
TUNER Ⓛ
P4002 ②
AUDIO LINE
VIDEO LINE
CAMERA PAUSE
TRACKING VR
MIC
R3169 75
R3168 75
R4095 47K
R4094 4700
Q3015 2SD636
R3085 56K
R3086 56K
L3019 220μ
R3089 10K
FL3003 VLF0083
D3021 ISS16 ×2
D3022
D3006 MA165
C3070 6V47
AMP
P.B VIDEO LEVEL
Q3022 2SC2206 AMP
Q3023 2SC2206 PHASE COMPENSATOR
L8013 220μ
C8006 16V220
C8001 0.01
R8002 56K
R8003 1K
R8004 10K
R8005 180
Q8001 2SD636 AMP
FL8001 VLF0085
R8006 1200
C8002 0.001
R8007 180
R8009 2700
R8008 8200
FOR EG
Q8002 2SC2206B
C8004 0.01
C8005 0.01
TP8001
C8069 0.01
ACC
B.M
6dB UP/DOWN
PB AMP
DF i
BURST GATE
3dB UP
GND
VCC
PB
REC
IC8001 AN6360
R8010 5600
FL8002 VLF0113
R8015 820
R8016 1200
C8003 0.01
C8007 50V1
R8017 680K
R8019 15K
D8002 MA165
R8020 22K
R8021 10KB
COMB BAL
FL8003 VLF0090
R8011 1K
C8008 330P
R8013 1200
TP8002
FL8004 VLF0094
R8012 1K
R8014 1200
C8009 0.01
R8022 390
C8010 0.01
L8002 6.8μ
R8023 15K
Q8003 2SD636
DL8001 VLD0014
(P.B-FIELD-ON)
L8001 220μ
R8038 390 1/2W
R8001 1K
L8004 6.8mH
C8020 16V10
C8019 560P
C8021 0.0012
R8036 220K
R8037 27K
D8001 VD1222
Q8006 2SB641
C8022 50V1
Q8007 2SD636
R8039 3900
R8040 6800
FOR EG
R8041 1800
Q8008 2SD889 BUFFER
D8003 MA165
D8004 MA165
R8042 1K
L8005 47μ
C8047 0.01
R8069 2200
C8048 0.01
C8049 15P (NPO)
R8070 2.2M 1/4W
C8023 0.01
R8071 270K
C8050 50V2.2
TP8004
D8005 MA165
D8006 MA165
TP8006
TP8007
TP8010
FL8005 VLF0095
C8024 0.01
R8081 1K
Q3026 2SD638
Q3027 2SD636
D3025 MA165
C3104 16V10
R3153 1200
R3154 1.2M 1/4W
R3155 50KB
R3156 56K
H. FREQ
C3105 220P (NPO)
C3111 33P
R3157 8200
C3106 560P
IC3005 μPD4069C
C3107 560P
R3158 6800
R3159 6800
R3160 18K
R8056 6800
C8034 820P
C8035 16V10
R8057 2200
C8036 0.018
C8037 120P (NPO)
C8038 180P (NPO)
R8059 500B
AFC
R8066 5600
R8067 15K
C8046 820P
IC8003 AN6363
ND GATE
GATE
M.M
P-COM
VCO
CW OUT
1/160.5
1/4
90° ROTA
CONTROL
FS1
DOC-G
POWER
SYNC SEC
AMP
DOC
REC
R8061 10K
TP8009
C8039 16V33
C8040 16V33
C8041 0.01
R8062 10K
C8042 50V1
C8043 0.1
R8063 5600
C8044 0.056
R8064 1K
D8011 MA165
R8065 12K
R8074 1200
R8073 470
L8007 100μ
C8045 0.001
C8067 220P
R8075 4700
C8068 0.01
R8068 1K
C8051 100P
TP8008
R8083 47K
IC8004 AN6371
AMP
APC P-COM
KILLER P-COM
SW
KILLER P-COM
X-VCO
B.M
R8084 270K
R8077 3900
R8072 1800
L8008 56μ
X8002 VSX0068
APC
C8052 0.033
C8053 16V10
C8065 0.01
C8054 4P (NPO)
C8055 6P (NPO)
C8060 40P
C8056 16V33
L8009 220μ
C8057 16V10
C8066 0.01
TP8011
L8011 220μ
TP8012
6 5 4 3 2 1
A B C D E F G H I


Q3022 2SC2206 AMP
Q3023 2SC2206 PHASE COMPENSATOR
REC CHROMA CURR
PB CHROMA LEVEL
TP3012
COMB BAL
DL8001 VLD0014
Q8003 2SD636
(P.B-FIELD-ON)
Q8004 2SC2206 AMP
FOR EG
Q8005 2SC2206B
Q8009 2SC2206B
Q8010 2SC2206B
Q8011 2SC2206
IC8002 AN6552
SECAM KILLER
FL8006 VLF0143
FL8005 VLF0095
TP8004
TP8005
TP8006
TP8007
TP8010
TP8011
TP8012
KILLER P-COM
B.M
IC8005 AN6353
1/2³
1/2²
1/2886 (REC)
1/2771 (PB)
1/2
X'TAL OSC
GND
VCC
REF
Q4002 2SD958
Q4004 2SD636
Q4015 2SD636
Q4016 2SD638
T4001 VLT0118
Q4019 2SA719 2SB561
Q4020 2SD639R 2SC1318R
T4002 VLT0116
AUDIO BIAS CURR
P4004
A. HEAD (W)
GND
A. HEAD (R)
P4003
FE HEAD
GND
P4005
AE HEAD
GND
P4001
MUTING
X2H
LOAD END.REC.AD.L
A.D.H
Q4021 2SD636
Q4022 2SB641
Q4023 2SD655
D4004
D4005
D4008
D4009
TP4009 REC.
0.5V/1msec. div.
TP8004 REC.
50mV/20μsec. div.
TP8003 REC.
0.2V/20μsec. div.
TP8002 REC.
0.2V/20μsec. div.
TP8001 REC.
0.2V/20μsec. div.
TP8008
0.5V/20μsec. div.
TP8003 P.B
0.2V/20μsec. div.
TP8002 P.B
0.2V/20μsec. div.
TP8001 P.B
50mV/20μsec. div.
TP8009
2V/20μsec. div.
TP8010
0.5V/20μsec. div.
TP8011
0.5V/20μsec. div.
TP8012 P.B
0.2V/1μsec. div.
I
J
K
L
M
N
O
P
Q

Luminance, Chrominance & Audio C.B.A	
Q3001	E-11
Q3002	F-10
Q3003	G-11
Q3004	H-11
Q3005	H-10
Q3006	H-10
Q3007	I-11
Q3008	J-11
Q3009	C-9
Q3010	D-9
Q3011	E-9
Q3012	F-9
Q3013	C-8
Q3014	D-8
Q3015	D-7
Q3016	G-7
Q3017	H-8
Q3018	I-8
Q3019	I-8
Q3020	J-8
Q3021	H-7
Q3022	I-7
Q3023	I-7
Q3024	C-4
Q3025	C-4
Q3026	C-3
Q3027	C-3
Q3028	C-7
Q4001	L-7
Q4002	L-7
Q4003	L-8
Q4004	L-7
Q4005	M-8
Q4006	L-11
Q4007	M-8
Q4008	N-7
Q4009	N-10
Q4010	N-11
Q4011	M-11
Q4012	O-8
Q4013	O-8
Q4014	N-8
Q4015	N-7
Q4016	N-7
Q4017	O-7
Q4019	N-6
Q4020	N-6
Q4021	N-5
Q4022	N-5
Q4023	O-5
Q4024	N-4
Q4025	K-10
Q4026	L-10
Q8001	E-5
Q8002	E-5
Q8003	I-5
Q8004	J-5
Q8005	L-5
Q8006	F-3
Q8007	G-4
Q8008	H-4
Q8009	K-4
Q8010	L-4
IC3001	C-10
IC3002	G-9
IC3003	I-9
IC3004	E-7
IC3005	C-2
IC4001	M-9
IC4002	O-9
IC8001	F-5
IC8002	J-4
IC8003	F-2
IC8004	H-2
IC8005	K-2

JA (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
a	Ref 25 Hz	JA-a	Servo & Still
b	Short Play (L)	JA-b	Servo & Still
c	Vss Out	JA-c	Servo & Still
d	Sw Pulse	JA-d	Servo & Still

JB (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
a	Rec (H)	JB-a	Servo & Still
b	Trick Play (H)	JB-b	Servo & Still
c	Still V-sync	JB-c	Servo & Still
d	GND	JB-d	Servo & Still

JC (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
a	D.O.C. In	JC-a	Servo & Still
b	D.O.C. Out	JC-b	Servo & Still
c	TR VR	JC-c	Servo & Still
d	TR VR	JC-d	Servo & Still

P3003 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	9V	P1-1	RF Converter
2	—	—	—
3	Video Out	P1-3	RF Converter
4	GND	P1-4	RF Converter
5	Audio Out	P1-5	RF Converter

P3004 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	Audio	P6601-4	Rear Jack
2	GND	P6601-5	Rear Jack
3	Video	P6601-6	Rear Jack
4	Colour Sw On	P6601-1	Rear Jack
5	Test Sig. On	P6601-2	Rear Jack
6	+ 12V Out	P6601-3	Rear Jack

P3005 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	Audio In	P702-3	TV-Demodu.
2	—	—	—
3	Video In	P702-1	TV-Demdu.
4	GND	P702-2	TV-Demodu.
5	Tuner (H)	P7501-2	Timer

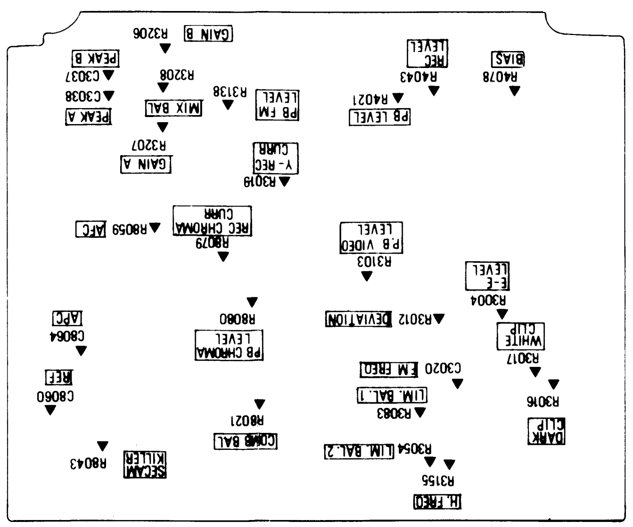
P3006 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	Audio	P6603-4	Rear Jack
2	GND	P6603-3	Rear Jack
3	Video	P6603-2	Rear Jack
4	P.B (H)	P6603-1	Rear Jack

P3007 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	EE/VV Select	P6001-4	System Control
2	Rec/Play 12V	P6001-6	System Control
3	GND	—	—
4	Rec 12V	P6001-3	System Control
5	Play 12V	P6001-7	System Control
6	Camera Pause	P6013-5	System Control

P4001 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	Audio Mute	P6008-6	System Control
2	×2 (H)	P6008-3	System Control
3	Load	P6001-9	System Control
4	A.D. (H)	P6001-8	System Control

P4002 (Luminance, Chrominance & Audio C.B.A)			
PIN NO.	SIGNAL NAME	DESTINATION	
1	N.R. Sw	P6504-3	Operation & Infrared
2	Camera	P6504-4	Operation & Infrared

Luminance, Chrominance & Audio C.B.A.			
Q3001	B-5	Q4013	B-3
Q3002	E-2	Q4014	C-2
Q3003	E-1	Q4015	B-2
Q3004	E-1	Q4016	B-2
Q3005	E-1	Q4017	A-2
Q3006	G-2	Q4019	B-2
Q3007	G-2	Q4020	A-1
Q3008	G-1	Q4021	C-3
Q3009	C-4	Q4022	D-3
Q3010	D-4	Q4023	D-3
Q3011	C-4	Q4025	B-3
Q3012	C-5	Q4026	B-3
Q3013	G-3	Q8001	F-3
Q3014	C-5	Q8002	G-3
Q3015	D-5	Q8003	F-6
Q3016	E-4	Q8004	F-5
Q3017	D-6	Q8005	E-6
Q3018	D-6	Q8006	F-4
Q3019	E-6	Q8007	G-3
Q3020	D-6	Q8008	F-5
Q3021	D-4	Q8009	F-6
Q3022	E-3	Q8010	F-6
Q3023	E-2	Q8011	E-6
Q3028	G-3		
Q4001	C-1	IC3001	C-5
Q4002	C-1	IC3002	D-6
Q4003	B-1	IC3003	G-2
Q4004	C-1	IC3004	D-5
Q4005	C-1	IC3005	B-6
Q4006	B-1	IC4001	D-1
Q4007	C-3	IC4002	D-2
Q4008	C-2	IC8001	F-4
Q4009	D-2	IC8002	G-6
Q4010	D-1	IC8003	G-4
Q4011	D-1	IC8004	G-5
Q4012	B-3	IC8005	G-6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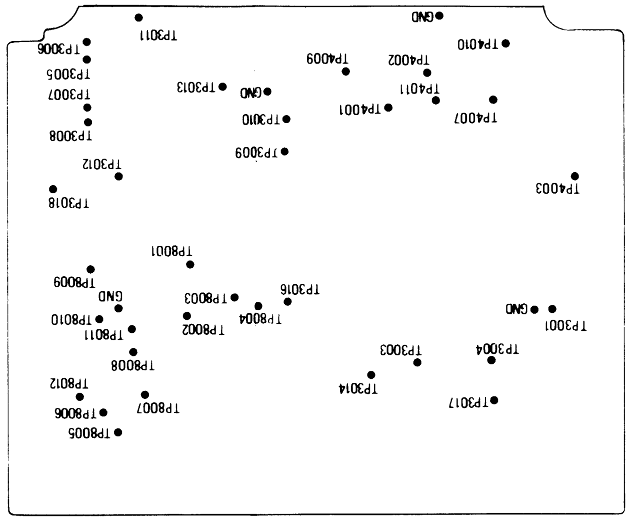
PEAK B C3037
R3208
C3038
PEAK A
MIX BAL
R3138
PB FM LEVEL
R4021
PB LEVEL
REC LEVEL
R4043
BIAS
R4078
R3207
GAIN A
R3019
Y-REC CURR
R8059 AFC
R8079
REC CHROMA CURR
PB VIDEO LEVEL
R3103
E-E LEVEL
R3004
R8080
PB CHROMA LEVEL
C8064
AFC
R3012 DEVIATION
WHITE CLIP
R3017
C3020 FM FREQ
REF
C8060
LIM. BAL. 1
R3083
R3016
R8021
COMB BAL
DARK CLIP
R3054 LIM. BAL. 2
R8043
SECAM KILLER
R3155
H. FREQ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TP3011
GND
TP4010
TP3005
TP4009
TP4002
TP3007
TP3013
GND
TP4011
TP3010
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TP4007
TP3008
TP3009
TP3012
TP4003
TP3018
TP8001
TP8009
TP3016
GND
TP8010
TP8003
TP8004
GND
TP3001
TP8011
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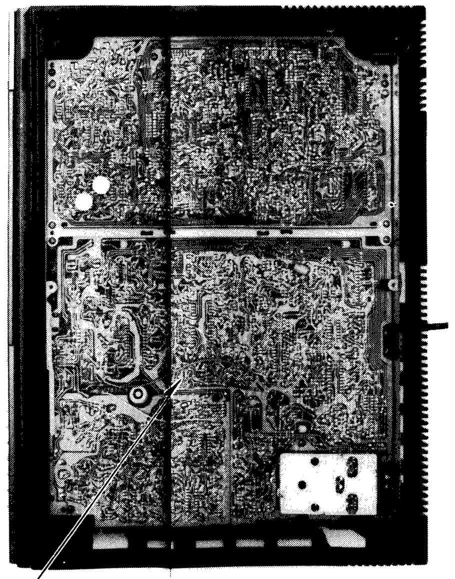
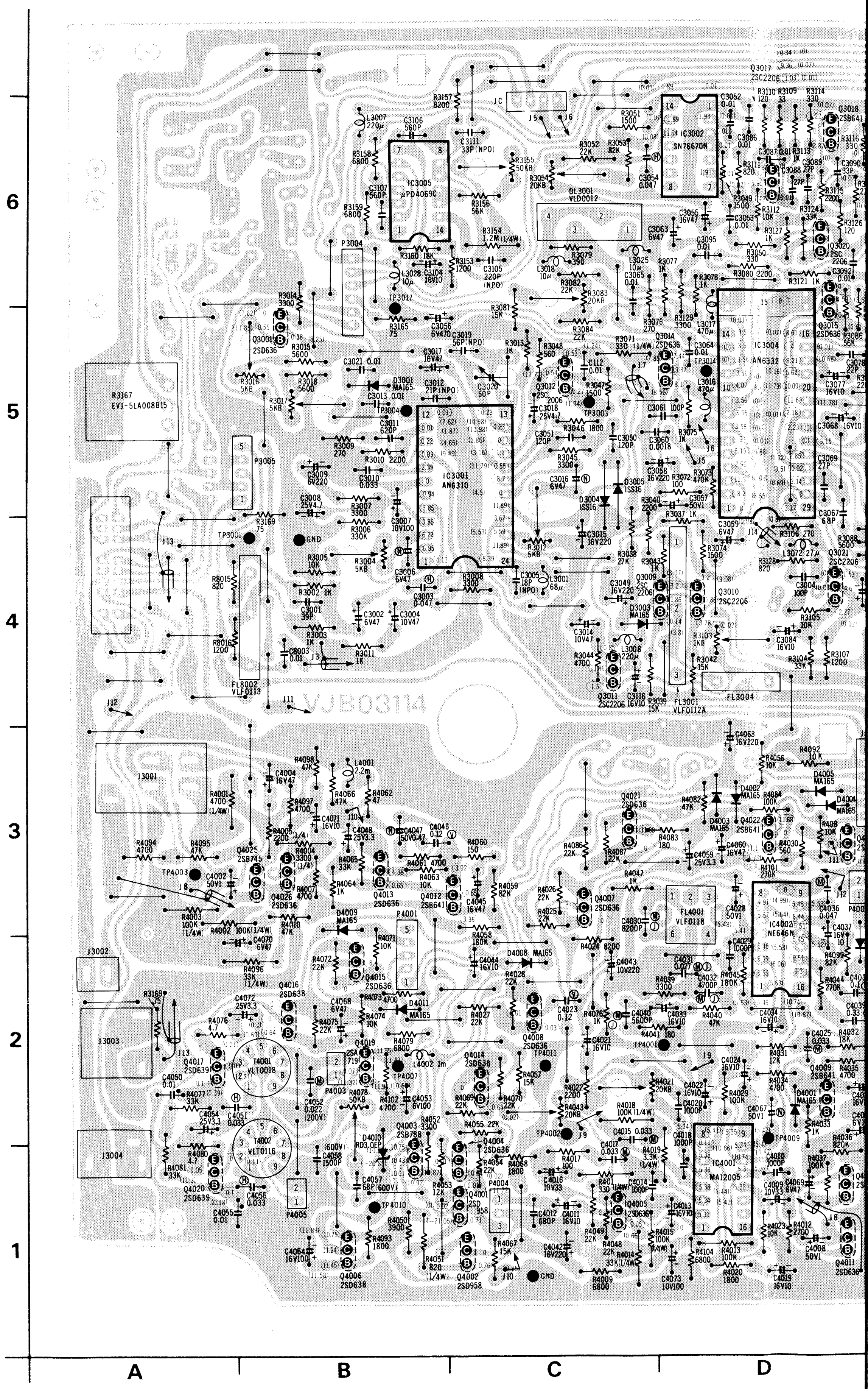
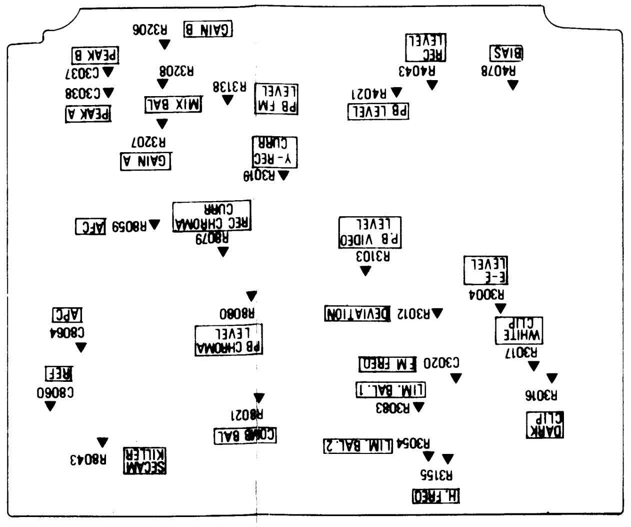
TP3003
TP3004
TP8008
TP8012
TP3014
TP8007
TP3017
TP8006
TP8005


Luminance, Chrominance & Audio Board

LUMINANCE, CHROMINANCE & AUDIO BOAR


6
5
4
3
2
1
A
B
C
D
VJB03114

LUMINANCE, CHROMINANCE & AUDIO BOARD (VEP03114A)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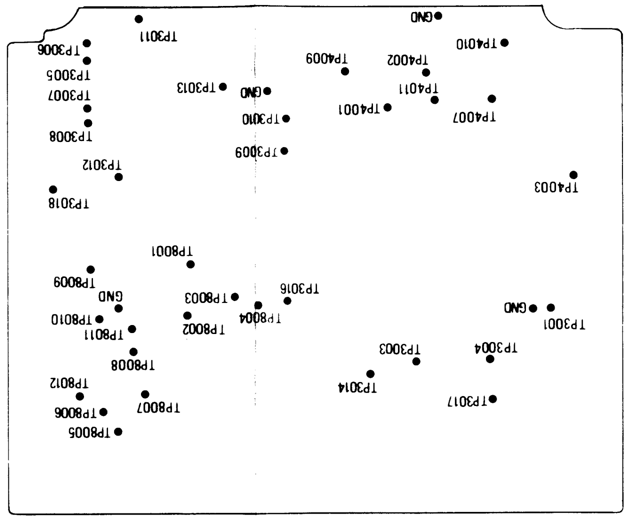
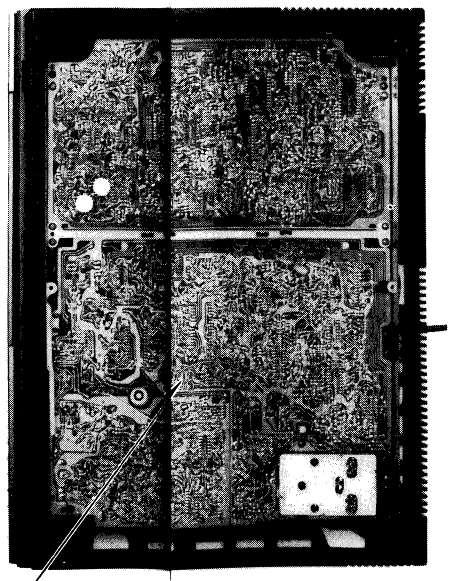
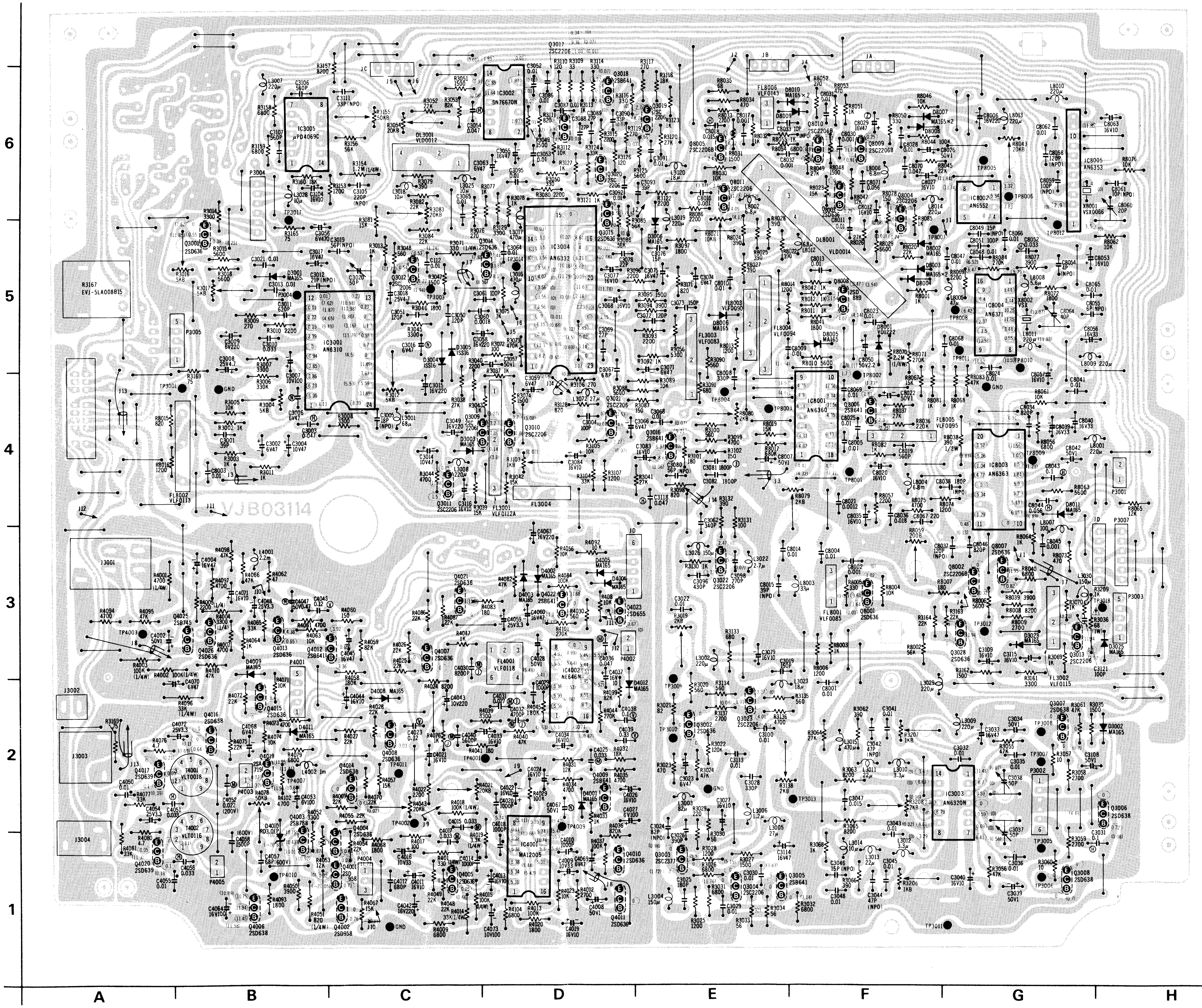
PEAK B
R3208
C3037
C3038
PEAK A
MIX BAL
R3138
PB FM LEVEL
R4021
PB LEVEL
REC LEVEL
R4043
BIAS
R4078
Y-REC CURR
R3018
R3207
GAIN A
REC CHROMA CURR
R8079
R8059 AFC
PB VIDEO LEVEL
R3103
E-E LEVEL
R3004
APC
C8064
R8080
PB CHROMA LEVEL
R3012 DEVIATION
WHITE CLIP
R3017
REF
C8060
C3020 FM FREQ
LIM. BAL.1
R3083
R3016
DARK CLIP
COMB BAL
R8021
R3054 LIM. BAL.2
SECAM KILLER
R8043
R3155
H. FREQ





Luminance, Chrominance & Audio Board


VJB03114
6
5
4
3
2
1
A
B
C
D
E
F
G
H

P3001

1	GND
2	+12V

P3002

1	VIDEO HEAD A
2	VIDEO HEAD A
3	GND
4	GND
5	VIDEO HEAD B
6	VIDEO HEAD B

P3003

1	+9V
2	GND
3	VIDEO OUT
4	GND
5	AUDIO OUT

P3004

1	AUDIO OUT
2	GND
3	VIDEO OUT
4	COLOR SW ON
5	TEST SIG ON
6	+12V OUT

P3005

1	AUDIO IN
2	GND
3	VIDEO IN
4	GND
5	TUNER Ⓛ

P3007

1	EE/VV SELECT
2	REC PLAY 12V
3	GND
4	REC 12V
5	RUE 12V
6	CAMERA PAUSE

P4001

1	MUTING
2	X2 H
3	LOAD END REC AD Ⓛ
4	A.D Ⓗ
5	

P4002

1	DOLBY NR ON/OFF
2	CAMERA

P4003

1	EE HEAD
2	GND

P4004

1	A. HEAD (W)
2	GND
3	A HEAD (R)

P4005

1	AE HEAD
2	GND

JA

1	REF OUT
2	SHORT PLAY Ⓛ
3	VSS OUT
4	SW PULSE IN

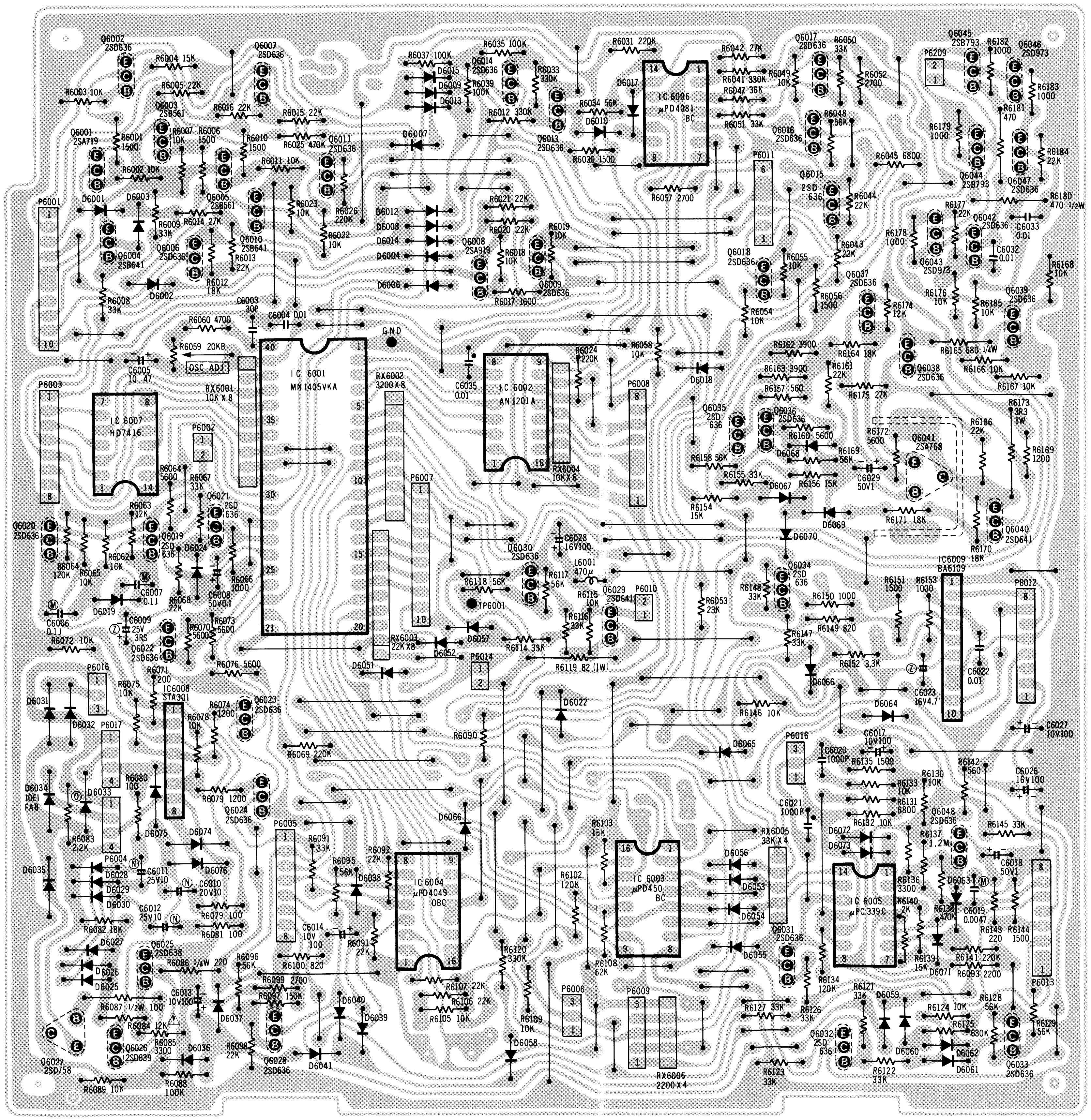
JB

1	REC 12V
2	TRICK PLAY Ⓗ
3	STILL V-SYNC
4	GND

JC

1	DOC CONTROL IN
2	DOC PULSE OUT
3	TRACKING VR
4	TRACKING VR

SYSTEM CONTROL BOARD (VEP06129A1)


5
4
3
2
1
A
B
C
D
E
F
IC 6001 MN1405VKA
IC 6002 AN1201A
IC 6003 μPD450BC
IC 6004 μPD4049OBC
IC 6005 μPC339C
IC 6006 μPD4081BC
IC 6007 HD7416
IC6008 STK501
IC6009 BA6109
RX6001 10K X 8
RX6002 3200 X 8
RX6003 22K X8
RX6004 10K X 6
RX6005 33K X 4
RX6006 2200 X 4
P6001
P6002
P6003
P6004
P6005
P6006
P6007
P6008
P6009
P6010
P6011
P6012
P6013
P6014
P6016
P6017
P6209
OSC ADJ
GND
TP6001
L6001 470μ

P6001

1	REC REQUEST
2	PB-ADUB 12V
3	REC +12V
4	EE/VV SEL
5	CH LOCK
6	REC PLAY 12V
7	PLAY BACK 12V
8	AUDIO DUB 12V
9	LOAD END REC DUB Ⓗ
10	———

P6003

1	12V
2	FF
3	REW
4	A-DUB
5	REC
6	PLAY
7	5V
8	GND

P6002

1	SAFETY TAB
2	5V

P6007

1	C3
2	C2
3	C1
4	C0
5	A3
6	A2
7	A1
8	A0
9	MEMORY COUNTER
10	———

P6016

1	FF REW SOL A
2	FF REW SOL B
3	FF REW SOL C

P6017

1	PLAY SOL A
2	PLAY SOL B
3	PLAY SOL C
4	———

P6004

1	PINCH SOLENOID A
2	PINCH SOLENOID B
3	PINCH SOLENOID C
4	UNREG 20V

P6005

1	POWER ON
2	TURN OVER PULSE
3	CAP POS/NEG
4	MOTOR ON
5	CYLINDAR LOCK
6	12V
7	SLACK SENSOR
8	GND

P6006

1	REEL SENSOR
2	12V
3	GND

P6209

1	REEL Ⓜ
2	REEL Ⓜ

P6011

1	DELAYED X 9 Ⓛ
2	LOADING END Ⓗ
3	PAUSE RESET Ⓛ
4	PAUSE Ⓛ
5	PAUSE LED
6	1/2 X 9 Ⓗ

P6008

1	5V
2	X 1/2
3	X 2
4	X 2
5	FRAME ADV
6	AUDIO MUTE
7	X 9 Ⓗ
8	STILL Ⓗ

P6010

1	CASSETTE IN 12V
2	12V

P6014

1	LED (−)
2	LED (+)

P6012

1	5V
2	POWER OFF Ⓛ
3	———
4	REG 12V
5	UNREG 12V
6	GND
7	LOADING Ⓜ
8	LOADING Ⓜ

P6015

1	SUPPLY PHOTO TR
2	GND
3	SUPPLY PHOTO TR

P6013

1	TIMER SET
2	TIMER SET
3	TIMER ON
4	DEW LED
5	CAMERA PAUSE
6	TAKE UP PHOTO
7	DEW SENSOR
8	GND

P6009

1	STOP Ⓛ
2	EJECT Ⓛ
3	LOADING END Ⓛ
4	CUE REV Ⓛ
5	———

System Control C.B.A.	
Q6001	B-4
Q6002	B-5
Q6003	B-5
Q6004	B-4
Q6005	B-5
Q6006	B-4
Q6007	C-5
Q6008	D-4
Q6009	D-4
Q6010	C-4
Q6011	C-5
Q6013	D-5
Q6014	D-5
Q6015	E-4
Q6016	E-5
Q6017	E-5
Q6018	E-4
Q6019	B-3
Q6020	B-3
Q6021	B-3
Q6022	B-3
Q6023	C-2
Q6024	C-2
Q6025	B-1
Q6026	B-1
Q6027	B-1
Q6028	C-1
Q6029	D-3
Q6030	D-3
Q6031	E-1
Q6032	E-1
Q6033	F-1
Q6034	E-3
Q6035	E-4
Q6036	E-4
Q6037	E-4
Q6038	E-4
Q6039	F-4
Q6040	F-3
Q6041	E-3
Q6042	F-4
Q6043	E-4
Q6044	F-5
Q6045	F-5
Q6046	F-5
Q6047	F-5
Q6048	F-2
IC6001	C-3
IC6002	D-4
IC6003	D-1
IC6004	C-1
IC6005	E-1
IC6006	D-5
IC6007	B-3
IC6008	B-2
IC6009	F-3

PIN NO.	SIGNA
1	Rec Request
2	P.B A. Dub 1
3	Rec 12V
4	EE/VV Select
5	CH Lock
6	Rec/Play 12V
7	Playback 12V
8	A-Dub +12V
9	Loading Rec
10	—

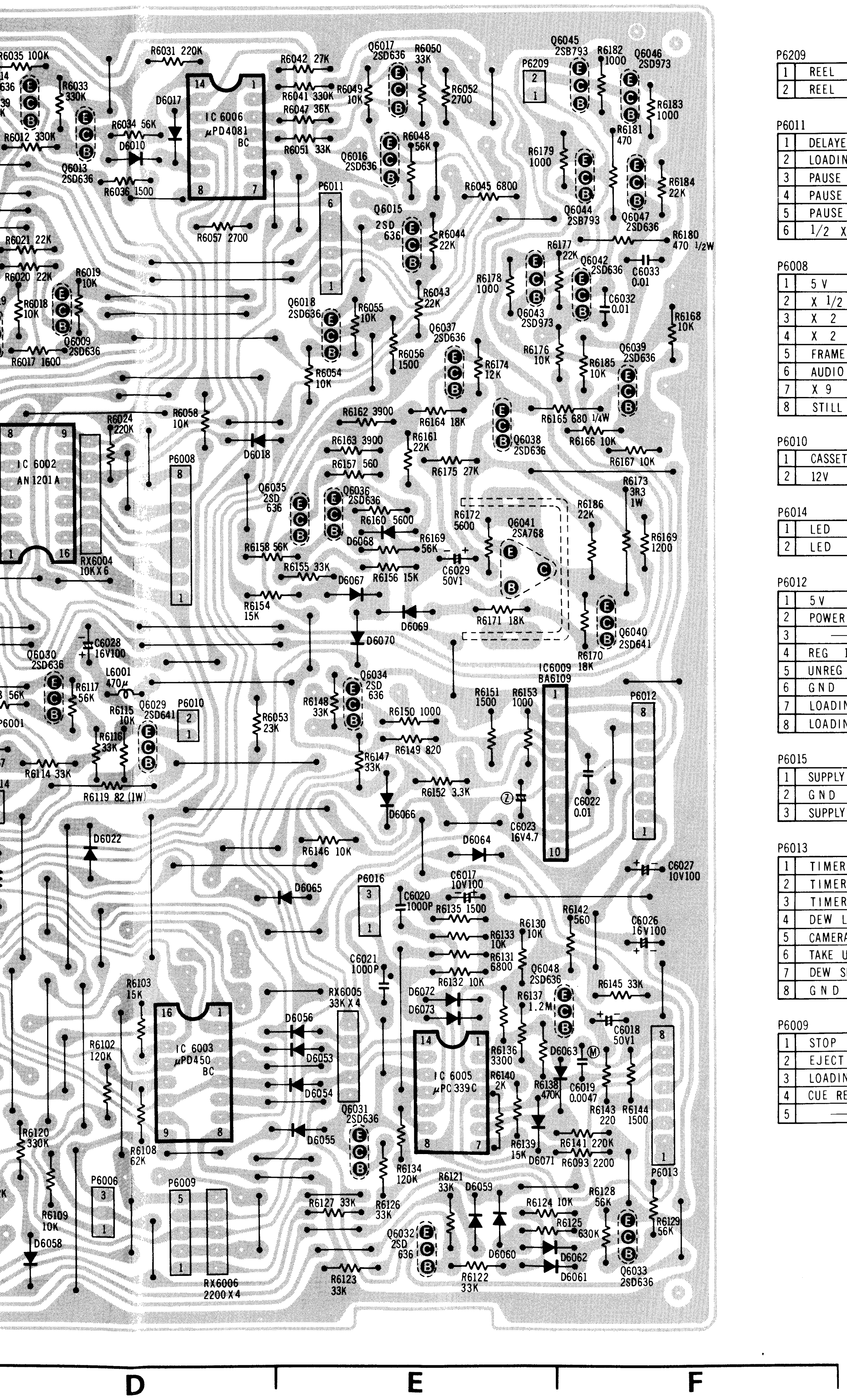
PIN NO.	SIGNA
1	12V
2	FF
3	Rew
4	A-Dub
5	Rec
6	Play
7	5V
8	GND

PIN NO.	SIGNA
1	Power On
2	Turn Over
3	Cap Pos/Neg
4	Motor SW
5	Cyl Lock
6	+12V
7	Slack
8	GND

PIN NO.	SIGNA
1	Micon C3
2	Micon C2
3	Micon C1
4	Micon C0
5	Micon A3
6	Micon A2
7	Micon A1
8	Micon A0
9	Memory Cou
10	—

PIN NO.	SIGNA
1	+5V
2	×1/2 (H)
3	×2 (H)
4	×2 (H)
5	Frame Adv
6	Audio Mute
7	×9 (H)
8	Still (H)

PIN NO.	SIGNAL
1	Delayed ×9 (L
2	Loading End
3	Pause Reset (
4	Still Pause (L)
5	Pause LED
6	1/2×9 (H)



P6209

1	REEL Ⓜ
2	REEL Ⓜ

P6011

1	DELAYED X 9 Ⓛ
2	LOADING END Ⓗ
3	PAUSE RESET Ⓛ
4	PAUSE Ⓛ
5	PAUSE LED
6	1/2 X 9 Ⓗ

P6008

1	5 V
2	X 1/2
3	X 2
4	X 2
5	FRAME ADV
6	AUDIO MUTE
7	X 9 Ⓗ
8	STILL Ⓗ

P6010

1	CASSETTE IN 12V
2	12V

P6014

1	LED (−)
2	LED (+)

P6012

1	5 V
2	POWER OFF Ⓛ
3	———
4	REG 12V
5	UNREG 12V
6	GND
7	LOADING Ⓜ
8	LOADING Ⓜ

P6015

1	SUPPLY PHOTO TR
2	GND
3	SUPPLY PHOTO TR

P6013

1	TIMER SET
2	TIMER SET
3	TIMER ON
4	DEW LED
5	CAMERA PAUSE
6	TAKE UP PHOTO
7	DEW SENSOR
8	GND

P6009

1	STOP Ⓛ
2	EJECT Ⓛ
3	LOADING END Ⓛ
4	CUE REV Ⓛ
5	———

System Control C.B.A.	
Q6001	B-4
Q6002	B-5
Q6003	B-5
Q6004	B-4
Q6005	B-5
Q6006	B-4
Q6007	C-5
Q6008	D-4
Q6009	D-4
Q6010	C-4
Q6011	C-5
Q6013	D-5
Q6014	D-5
Q6015	E-4
Q6016	E-5
Q6017	E-5
Q6018	E-4
Q6019	B-3
Q6020	B-3
Q6021	B-3
Q6022	B-3
Q6023	C-2
Q6024	C-2
Q6025	B-1
Q6026	B-1
Q6027	B-1
Q6028	C-1
Q6029	D-3
Q6030	D-3
Q6031	E-1
Q6032	E-1
Q6033	F-1
Q6034	E-3
Q6035	E-4
Q6036	E-4
Q6037	E-4
Q6038	E-4
Q6039	F-4
Q6040	F-3
Q6041	E-3
Q6042	F-4
Q6043	E-4
Q6044	F-5
Q6045	F-5
Q6046	F-5
Q6047	F-5
Q6048	F-2
IC6001	C-3
IC6002	D-4
IC6003	D-1
IC6004	C-1
IC6005	E-1
IC6006	D-5
IC6007	B-3
IC6008	B-2
IC6009	F-3

P6001 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	Rec Request	P7501-4 Timer
2	P.B A. Dub 12V	P7501-5 Timer
3	Rec 12V	P3007-4 Luminance, Chrominance & Audio
4	EE/VV Select	P3007-1 Luminance, Chrominance & Audio
5	CH Lock	P7501-3 Timer
6	Rec/Play 12V	P3007-2 Luminance, Chrominance & Audio
7	Playback 12V	P3007-5 Luminance, Chrominance & Audio
8	A-Dub +12V	P4001-4 Luminance, Chrominance & Audio
9	Loading Rec ON	P4001-3 Luminance, Chrominance & Audio
10	—	— —

P6003 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	12V	P6501-1 Operation & Infrared
2	FF	P6501-4 Operation & Infrared
3	Rew	P6501-3 Operation & Infrared
4	A-Dub	P6501-7 Operation & Infrared
5	Rec	P6501-6 Operation & Infrared
6	Play	P6501-5 Operation & Infrared
7	5V	P6501-2 Operation & Infrared
8	GND	P6501-8 Operation & Infrared

P6005 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	Power On	P7502-2 Timer
2	Turn Over	P2004-2 Servo & Still
3	Cap Pos/Neg	P2004-1 Servo & Still
4	Motor SW	P2004-3 Servo & Still
5	Cyl Lock	P2004-5 Servo & Still
6	+12V	P1501-1 Tape Slack Sensor
7	Slack	P1501-3 Tape Slack Sensor
8	GND	P1501-2 Tape Slack Sensor

P6007 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	Micon C3	P6502-6 Operation & Infrared
2	Micon C2	P6502-7 Operation & Infrared
3	Micon C1	P6502-8 Operation & Infrared
4	Micon C0	P6502-5 Operation & Infrared
5	Micon A3	P6502-3 Operation & Infrared
6	Micon A2	P6502-4 Operation & Infrared
7	Micon A1	P6502-2 Operation & Infrared
8	Micon A0	P6502-1 Operation & Infrared
9	Memory Count	P6502-9 Operation & Infrared
10	—	— —

P6008 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	+5V	P2005-2 Servo & Still
2	×1/2 (H)	P2003-2 Servo & Still
3	×2 (H)	P4001-2 Luminance, Chrominance & Audio
4	×2 (H)	P2003-4 Servo & Still
5	Frame Adv	P2005-4 Servo & Still
6	Audio Mute	P4001-1 Luminance, Chrominance & Audio
7	×9 (H)	P2005-3 Servo & Still
8	Still (H)	P2005-1 Servo & Still

P6011 (System Control C.B.A)

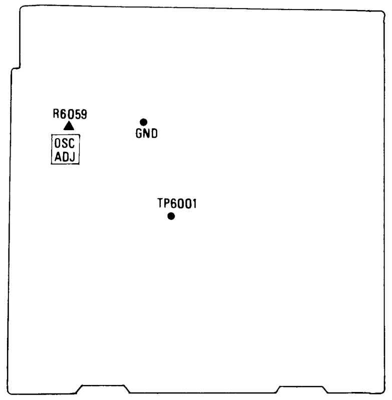
PIN NO.	SIGNAL NAME	DESTINATION
1	Delayed ×9 (L)	P2003-3 Servo & Still
2	Loading End	P2004-4 Servo & Still
3	Pause Reset (L)	P2003-5 Servo & Still
4	Still Pause (L)	P2004-6 Servo & Still
5	Pause LED	P6504-1 Operation & Infrared
6	1/2×9 (H)	P2003-1 Servo & Still

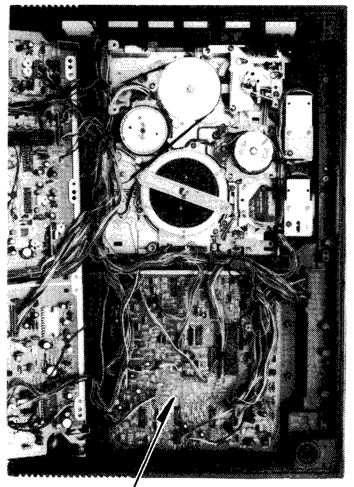
P6012 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	+5V	P1006-1 Power Supply
2	Power Off (L)	P1006-2 Power Supply
3	—	— —
4	Reg 12V	P1006-4 Power Supply
5	Unreg 13V	P1006-5 Power Supply
6	GND	P1006-6 Power Supply
7	⊕ Loading (M)	P1514-6 Pressure Solenoid
8	⊖ Loading (M)	P1514-5 Pressure Solenoid

P6013 (System Control C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	—	— —
2	Timer Set	P7502-1 Timer
3	Timer On	P7501-1 Timer
4	Dew LED	P6504-2 Operation & Infrared
5	Camera PS	P3007-6 Luminance, Chrominance & Audio
6	Takeup Photo	P1514-1 Pressure Solenoid
7	Dew Sensor	P1514-8 Pressure Solenoid
8	GND	P1514-7 Pressure Solenoid

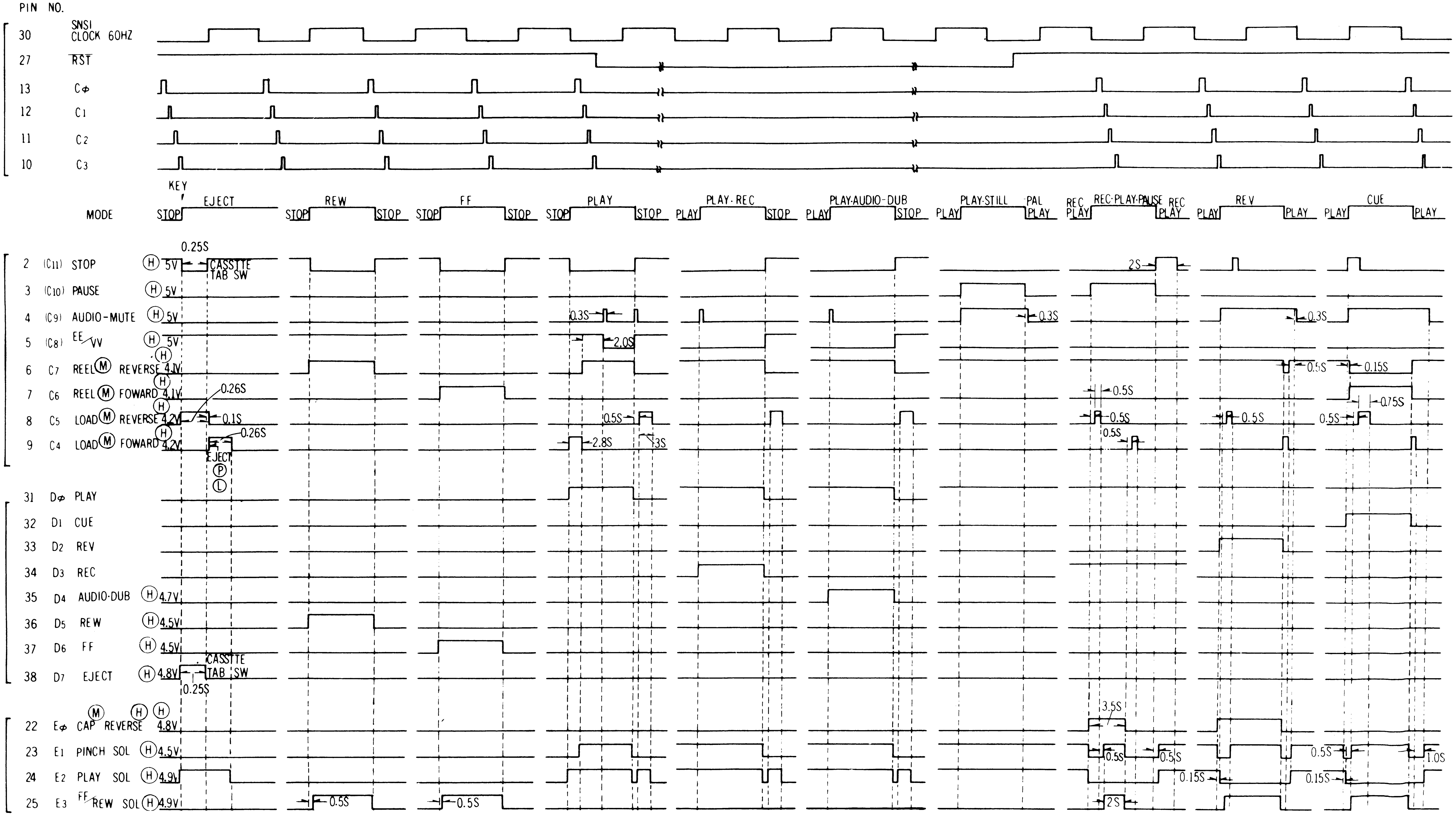




System Control Board

SYSTEM CONTROL *Timing Chart*

MICROCOMPUTER (MN1405VKA)


PIN NO.
30 SNSI CLOCK 60HZ
27 RST
13 Cφ
12 C1
11 C2
10 C3
KEY
MODE
STOP EJECT
STOP REW STOP
STOP FF STOP
STOP PLAY STOP
PLAY PLAY·REC STOP
PLAY PLAY·AUDIO·DUB STOP
PLAY PLAY·STILL PAL PLAY
REC PLAY REC·PLAY·PAUSE REC PLAY
PLAY REV PLAY
PLAY CUE PLAY
2 (C11) STOP (H) 5V
3 (C10) PAUSE (H) 5V
4 (C9) AUDIO-MUTE (H) 5V
5 (C8) EE/VV (H) 5V
6 C7 REEL (M) REVERSE (H) 4.1V
7 C6 REEL (M) FOWARD (H) 4.1V
8 C5 LOAD (M) REVERSE (H) 4.2V
9 C4 LOAD (M) FOWARD (H) 4.2V
31 Dφ PLAY
32 D1 CUE
33 D2 REV
34 D3 REC
35 D4 AUDIO·DUB (H) 4.7V
36 D5 REW (H) 4.5V
37 D6 FF (H) 4.5V
38 D7 EJECT (H) 4.8V
22 Eφ CAP (M) REVERSE (H) (H) 4.8V
23 E1 PINCH SOL (H) 4.5V
24 E2 PLAY SOL (H) 4.9V
25 E3 FF/REW SOL (H) 4.9V
0.25S
CASSTTE TAB SW
0.26S
0.1S
0.26S
EJECT
(P)
(L)
CASSTTE TAB SW
0.25S
0.5S
0.5S
0.3S
2.0S
0.5S
2.8S
3S
0.3S
2S
0.5S
0.5S
0.5S
3.5S
0.5S
0.5S
2S
0.3S
0.5S
0.5S
0.15S
0.5S
0.75S
0.5S
0.5S
0.15S
0.5S
0.15S
1.0S

SYSTEM CONTROL ICS VOLTAGE CHART

IC6001 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	0	0	0	0	0
2	3.42	0.03	0.03	0.03	0.03
3	0.03	0.03	0.03	0.04	0.03
4	0.03	0.03	0.03	0.04	0.03
5	3.1	0.04	0.04	3.18	3.17
6	0.2	4.03	4.03	0.21	4.04
7	0.21	0.21	0.21	4.03	0.21
8	0.23	0.22	0.22	0.22	0.22
9	0.21	0.21	0.21	0.21	0.21
10	0.33	0.32	0.32	0.33	0.32
11	0.31	0.3	0.3	0.32	0.32
12	0.31	0.31	0.31	0.81	0.31
13	0.56	0.56	0.57	0.02	0.8
14	0.02	0.02	0.02	0.02	0.02
15	0.02	0.02	0.02	0.02	0.02
16	0.02	0.02	0.02	0.02	0.02
17	0.02	0.02	0.02	0.02	0.02
18	0.11	0.11	0.11	0.11	0.11
19	0.35	0.44	0.44	0.55	0.54
20	0.11	0.15	0.15	0.17	0.17
21	0.51	0.41	0.41	0.51	0.51
22	0.09	0.08	0.08	0.09	0.09
23	0.21	5	5.01	0.2	0.2
24	0.18	5.33	5.33	0.18	0.18
25	0.19	0.18	0.17	5.33	5.33
26	0	0	0	0	0
27	5.3	5.29	5.29	5.29	5.29
28	5.4	5.39	5.39	5.39	5.39
29	5.4	4.39	5.39	5.39	5.39
30	2.75	2.74	2.75	2.75	2.75
31	0.27	5.5	5.34	0.27	0.27
32	0.19	0.17	0.17	0.18	0.18
33	0.15	0.14	0.14	0.14	0.14
34	0.24	0.23	5.35	0.23	0.23
35	0.23	0.22	0.22	0.23	0.23
36	0.24	0.22	0.22	0.23	5.36
37	0.24	0.22	0.22	5.36	0.23
38	0.15	0.14	0.14	0.15	0.15
39	5.4	5.39	5.39	5.4	5.4
40	2.1	2.1	2.1	2.1	2.1

IC6002 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW.
1	0.33	0.33	0.32	0.32	0.33
2	0.3	0.3	0.31	0.32	0.33
3	3.61	0.04	0.04	3.16	3.07
4	0.04	0.04	0.03	0.04	0.04
5	0.03	0.03	0.03	0.04	0.04
6	3.62	0.03	0.03	0.03	0.03
7	0	0	0	0	0
8	5.4	0	0	0	0
9	0.05	0.05	0.05	0.05	0.05
10	0.05	0.05	0.05	0.05	0.05
11	5.4	0.05	0.05	5.39	5.39
12	0.05	0.05	0.05	0.05	0.05
13	0	0	0	0	0
14	0.05	0.05	0.05	0.05	0.05
15	0.05	0.05	0.05	0.05	0.05
16	5.41	5.39	5.39	5.4	5.4

IC6003 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	5.31	5.3	5.3	5.3	5.29
2	4.26	0.4	0.4	4.25	4.25
3	0.51	0.41	0.42	0.52	0.54
4	4.87	4.86	4.86	4.85	4.86
5	0.21	0.15	0.15	0.3	0.21
6	0.01	5.39	5.4	−0.02	−0.02
7	0.35	0.49	0.44	0.63	0.68
8	0	0	0	0	0
9	0.11	0.11	0.11	0.12	0.14
10	5.36	5.35	5.35	5.35	5.36
11	0.21	0.15	0.15	0.19	0.22
12	4.43	—	—	2.08	2.09
13	0.51	0.41	0.42	0.53	0.56
14	0.49	0.49	0.48	0.47	0.47
15	5.31	5.3	5.3	5.26	5.28
16	5.41	5.4	5.4	5.4	5.4

IC6004 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	5.4	5.39	5.39	5.4	5.4
2	0	0	0	0	0
3	5.36	5.35	5.35	5.35	5.35
4	0	0	0	0	0
5	4.94	4.94	4.93	4.95	4.95
6	4.88	0	0	4.87	4.85
7	0.27	5.44	5.24	0.27	0.66
8	0	0	0	0	0
9	0.15	0.14	0.14	0.15	0.15
10	5.39	5.39	5.39	5.38	5.38
11	0.31	0.31	0.3	0.31	0.3
12	5.31	5.3	5.3	5.3	5.3
13	5.31	5.3	5.3	5.3	5.3
14	0.31	0.3	0.3	0.32	0.32
15	5.31	5.3	5.3	5.29	5.28
16	5.31	5.3	5.3	5.29	5.28

IC6005 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	0	0.65	0.73	1.8	0.64
2	0.06	0.06	0.06	0.06	0.06
3	5.41	0	0	0	5.4
4	0.4	0.4	0.4	0.4	0.4
5	0	0	0	0	0
6	0.45	0.07	0.06	0.47	0.47
7	2.66	2.65	2.66	2.66	2.65
8	0.7	0.7	0.7	0.69	0.7
9	0	0	0	0.66	0.4
10	0.7	0.7	0.69	0.6	0
11	0.66	0.66	0.66	0.66	0.66
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0

IC6006 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	5.41	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0.01	0.01	0.01	0.01	0.01
6	0.21	5	5.02	0.24	0.23
7	0	0	0	0	0
8	0.48	5.29	0.61	0.48	0.48
9	5.1	—	—	5.09	5.09
10	0	0	0	0	0
11	0	0	0	0	0
12	5.41	0	0	0	0
13	0.01	0.01	0.01	0.01	0.01
14	5.4	5.4	5.4	5.4	5.4

IC6007 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	0.23	0.22	0.22	0.22	0.22
2	11.8	11.84	11.83	11.88	11.88
3	0.24	0.23	0.22	0.23	5.36
4	10.64	—	1.28	0.77	0.13
5	0.24	0.23	0.22	5.36	0.23
6	10.64	0.84	1.41	0.12	0.79
7	0	0	0	0	0
8	0.05	0.05	0.06	0.05	0.05
9	1.84	1.84	1.84	1.83	1.83
10	11.66	11.6	0.18	11.64	11.64
11	0.24	0.23	5.36	0.23	0.23
12	10.65	0.13	0.14	0.78	0.79
13	0.28	5.5	5.34	0.27	0.27
14	5.4	5.39	5.39	5.39	5.39

IC6008 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	0	0	0	0	0
2	0	0	0	1.3	1.3
3	21.89	20.79	20.97	0.65	0.65
4	0	1.29	1.28	0	0
5	21.93	0.63	0.63	21.17	20.72
6	0	1.28	1.28	0	0
7	21.91	0.64	0.64	21.18	21.21
8	0	0	0	0	0

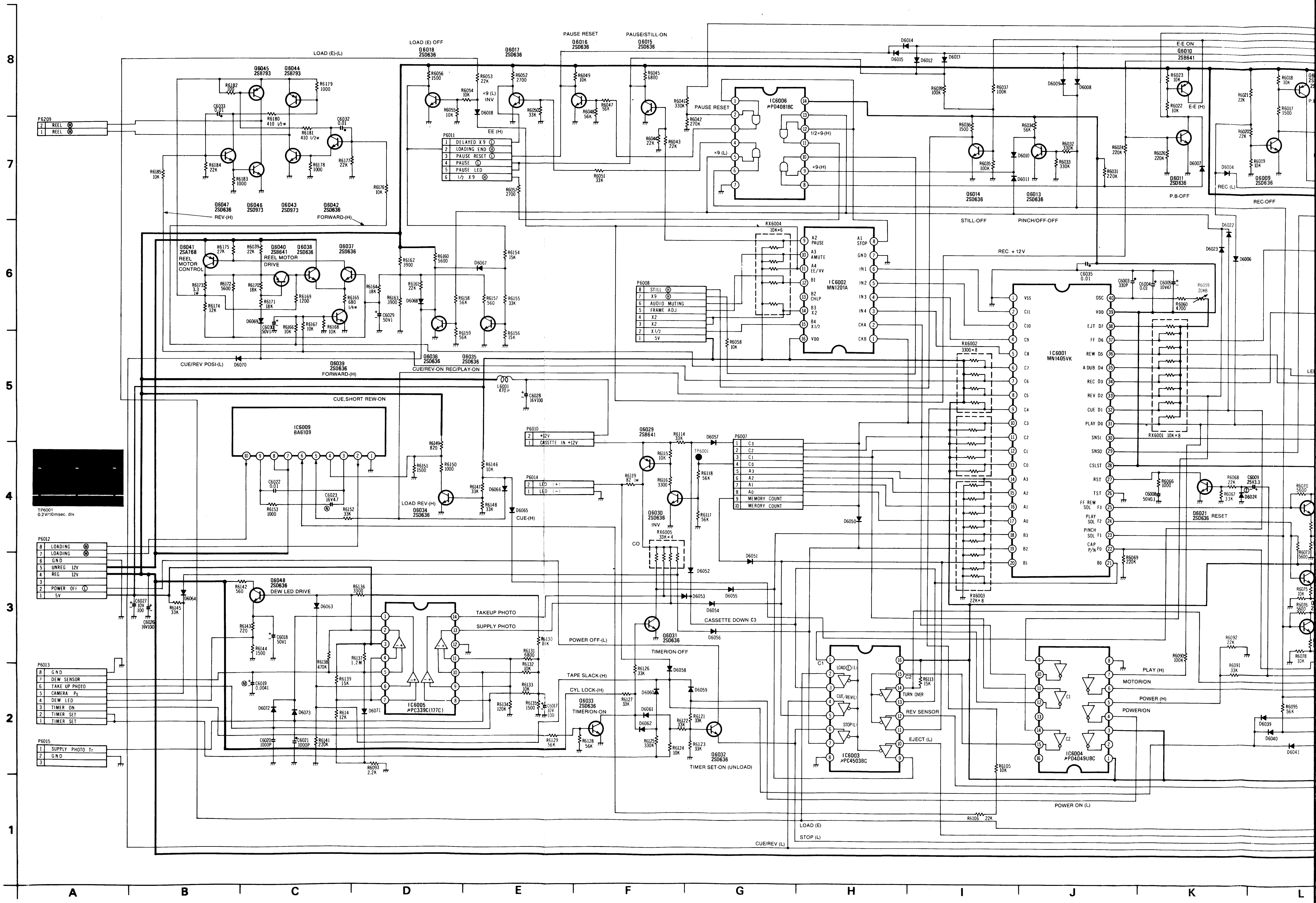
IC6009 DC VOLTAGE					
PIN NO.	STOP	PLAY	REC	F.F	REW
1	0	0	0	0	0
2	0.08	0.11	0.11	0.1	0.08
3	0.04	0.04	0.04	0.04	0.04
4	7.76	7.73	7.74	7.75	7.75
5	0.23	0.22	0.22	0.22	0.22
6	0.09	0.09	0.09	0.09	0.09
7	15.52	15.26	15.39	15.31	15.38
8	15.52	15.28	15.37	15.29	15.37
9	0.08	0.08	0.08	0.08	0.08
10	0.09	0.11	0.12	0.11	0.09

SYSTEM CONTROL TRANSISTORs D.C. VOLTAGE CHART

REF. NO.	Q6001			Q6002			Q6003			Q6004			Q6005			Q6006			Q6007		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	11.99	0	11.98	0	11.97	0.12	11.99	0.56	11.97	11.99	0	11.95	11.99	11.99	11.24	0	11.97	0.06	0	0.06	0.69
PLAY	11.92	−0.01	11.9	0	11.90	0.11	11.92	0.54	11.9	11.92	−0.01	11.88	11.92	11.92	11.17	0	11.94	0.05	0	0.06	0.69
REC	11.9	11.85	11.14	0	0.06	0.69	11.9	11.87	11.14	11.9	0	11.85	11.94	11.9	11.17	0	0.02	0.65	0	0.06	0.68
F.F	10.55	−0.02	10.53	0	10.53	0.11	10.55	0.54	10.54	10.55	−0.01	10.58	11.97	11.97	11.22	0	11.95	0.06	0	0.06	0.69
REW	10.55	−0.02	10.54	0	10.54	0.11	10.55	0.55	10.54	10.55	−0.01	10.58	11.98	10.55	11.96	0	11.95	0.06	0	11.96	0.02
REF. NO.	Q6008			Q6009			Q6010			Q6011			Q6012			Q6013			Q6014		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	11.99	0.11	11.98	0	11.98	0.27	11.99	11.95	11.25	0	0.05	0.63	0	0.05	0.66	0	5.38	0.1	0	0.03	0.67
PLAY	11.92	11.69	11.1	0	0.07	0.69	11.92	0.4	11.91	0	11.9	0.02	0	11.99	0.31	0	0.02	0.58	0	0.06	0.66
REC	11.94	0.06	11.93	0	11.93	0.24	11.94	0.66	11.93	0	11.92	0.02	0	0.05	0.66	0	0.02	0.57	0	0.03	0.67
F.F	11.97	0.1	11.96	0	11.96	0.26	11.97	11.93	11.22	0	0.05	0.63	0	0.05	0.66	0	5.37	0.1	0	0.03	0.68
REW	11.98	0.1	11.96	0	11.96	0.27	11.98	11.94	11.22	0	0.05	0.63	0	0.05	0.66	0	5.37	0	0	0.03	0.68
REF. NO.	Q6015			Q6016			Q6017			Q6018			Q6019			Q6020			Q6021		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	11.29	0.02	0	7.11	0	0	10.31	0	0	0.11	0.68	0	2.75	0	0	2.24	−0.4	0	5.3	0
PLAY	0	11.25	0.02	0	7.08	0	0	10.26	0	0	11.49	0	0	2.75	−0.63	0	2.23	−0.4	0	5.29	0
REC	0	11.26	0.02	20.74	20.72	20.72	0	10.28	0	0	11.51	0	0	2.75	−0.63	0	2.24	−0.4	0	5.32	0
F.F	0	11.28	0.02	0	7.1	0	0	10.29	0	0	0.11	0.68	0	2.75	−0.62	0	—	—	—	—	—
REW	0	11.28	0.02	0	7.1	0	0	10.29	0	0	0.11	0.68	0	2.75	−0.62	0	2.23	−0.4	07	5.29	0
REF. NO.	Q6022			Q6023			Q6024			Q6025			Q6026			Q6027			Q6028		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	5.4	0.19	0	5.4	0.18	0	5.4	0.2	0	0.08	0.69	0.11	21.71	0.08	22.29	0	21.8	0	0	0.53
PLAY	0	5.39	0.18	4.68	5.39	5.33	4.36	5.39	5	0	0.08	0.69	0.04	20.38	0.08	20.86	0	20.37	0	0.01	0.6
REC	0	5.41	0.18	4.7	5.4	5.33	4.39	5.41	5.03	0	0.08	0.69	0.07	20.53	0.08	21.1	0	20.63	0	0	0.59
F.F	—	—	—	0	5.39	0.18	0	5.39	0.2	0	0.08	0.69	0.23	20.76	0.08	21.26	0	20.99	0	0	0.55
REW	4.69	5.4	5.34	0	5.39	0.18	0	5.39	0.2	0	0.08	0.69	0.23	20.75	0.08	21.27	0.01	20.77	0	0	0.55
REF. NO.	Q6029			Q6030			Q6031			Q6032			Q6033			Q6034			Q6035		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	11.95	0.75	11.87	0	11.16	0.15	0	0	0.64	−0.01	13.25	0	0	6.31	0	0	7.76	0.37	0	6.33	0.02
PLAY	11.9	0.75	11.83	0	11.12	0.15	0	0	0.64	5.4	13.23	0	0	6.29	0	0	7.73	0.37	0	0.02	0.66
REC	11.92	0.79	11.84	0	11.13	0.15	0	0	0.64	5.4	13.23	0	0	6.3	0	0	7.75	0.36	0	0.02	0.66
F.F	11.9	1.33	11.77	0	10.51	0.18	0	0	0.64	−0.02	13.23	0	0	6.3	0	0	7.75	0.37	0	6.11	0.02
REW	11.9	1.33	11.78	0	10.5	0.18	0	0	0.64	−0.02	13.23	0	0	6.3	0	0	7.75	0.37	0	6.08	0.02
REF. NO.	Q6036			Q6037			Q6038			Q6039			Q6040			Q6041			Q6042		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	8.35	0	9.95	15.62	9.68	9.95	15.64	10.38	0	9.95	0.13	10.38	10.38	9.81	15.66	10.39	15.6	0	10.36	0.14
PLAY	0	8.21	0	1.92	14.43	2.5	1.92	15	2.53	0	0.04	0.66	2.84	2.52	2.84	15	2.84	14.4	0.72	0.76	1.39
REC	0	8.22	0	1.9	11.77	2.5	1.9	15.32	2.55	0	0.04	0.66	2.84	2.54	2.84	15.09	2.82	14.43	0.72	0.76	1.39
F.F	0	8.22	0	7.02	14.67	7.65	7.09	15.24	7.8	0	0.14	0.69	8.23	7.81	8.34	15.42	7.73	14.8	0	7.44	0.14
REW	0	8.22	0	6.69	14.58	7.25	6.68	15.2	7.33	0	0.14	0.69	7.6	7.32	7.59	15.45	7.59	14.86	0.75	0.87	1.45
REF. NO.	Q6043			Q6044			Q6045			Q6046			Q6047			Q6048					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	0	0	0	10.39	0	10.37	10.41	0	10.39	0	0	0	0	10.38	0.14	0	12	0.06			
PLAY	0	0.08	0.72	2.54	0.08	2.53	2.53	2.38	1.79	0	2.4	0	0	2.52	0.14	0	11.96	0.06			
REC	0	0.07	0.72	2.54	0.08	2.53	2.53	2.4	1.79	0	2.4	0	0	2.54	0.14	0	11.97	0.06			
F.F	0	7.4	0	7.48	7.43	6.72	7.5	0.03	7.52	0	0.03	0.75	0.76	0.87	1.46	0	11.98	0.06			
REW	0	0.02	0.75	7.34	0.03	7.35	7.34	7.29	6.58	0	7.29	0	0	7.34	0.14	0	11.99	0.06			

SYSTEM CONTROL SCHEMATIC DIAGRAM

System Control C.B.A	
Q6001	N-8
Q6002	N-7
Q6003	M-8
Q6004	M-8
Q6005	L-8
Q6006	P-7
Q6007	L-7
Q6008	L-8
Q6009	L-7
Q6010	K-8
Q6011	K-7
Q6012	J-8
Q6013	J-7
Q6014	I-7
Q6015	F-7
Q6016	E-8
Q6017	E-8
Q6018	D-8
Q6019	N-4
Q6020	N-4
Q6021	K-4
Q6022	L-4
Q6023	L-3
Q6024	L-3
Q6025	H-3
Q6026	O-3
Q6027	O-3
Q6028	M-2
Q6029	F-4
Q6030	F-4
Q6031	F-3
Q6032	G-2
Q6033	F-2
Q6034	D-4
Q6035	E-6
Q6036	D-6
Q6037	D-6
Q6038	C-6
Q6039	C-6
Q6040	C-6
Q6041	B-6
Q6042	C-7
Q6043	C-7
Q6044	C-8
Q6045	C-8
Q6046	C-7
Q6047	B-7
Q6048	C-3
IC6001	J-5
IC6002	H-6
IC6003	H-2
IC6004	J-2
IC6005	D-2
IC6006	G-7
IC6007	M-6
IC6009	C-4



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A
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C
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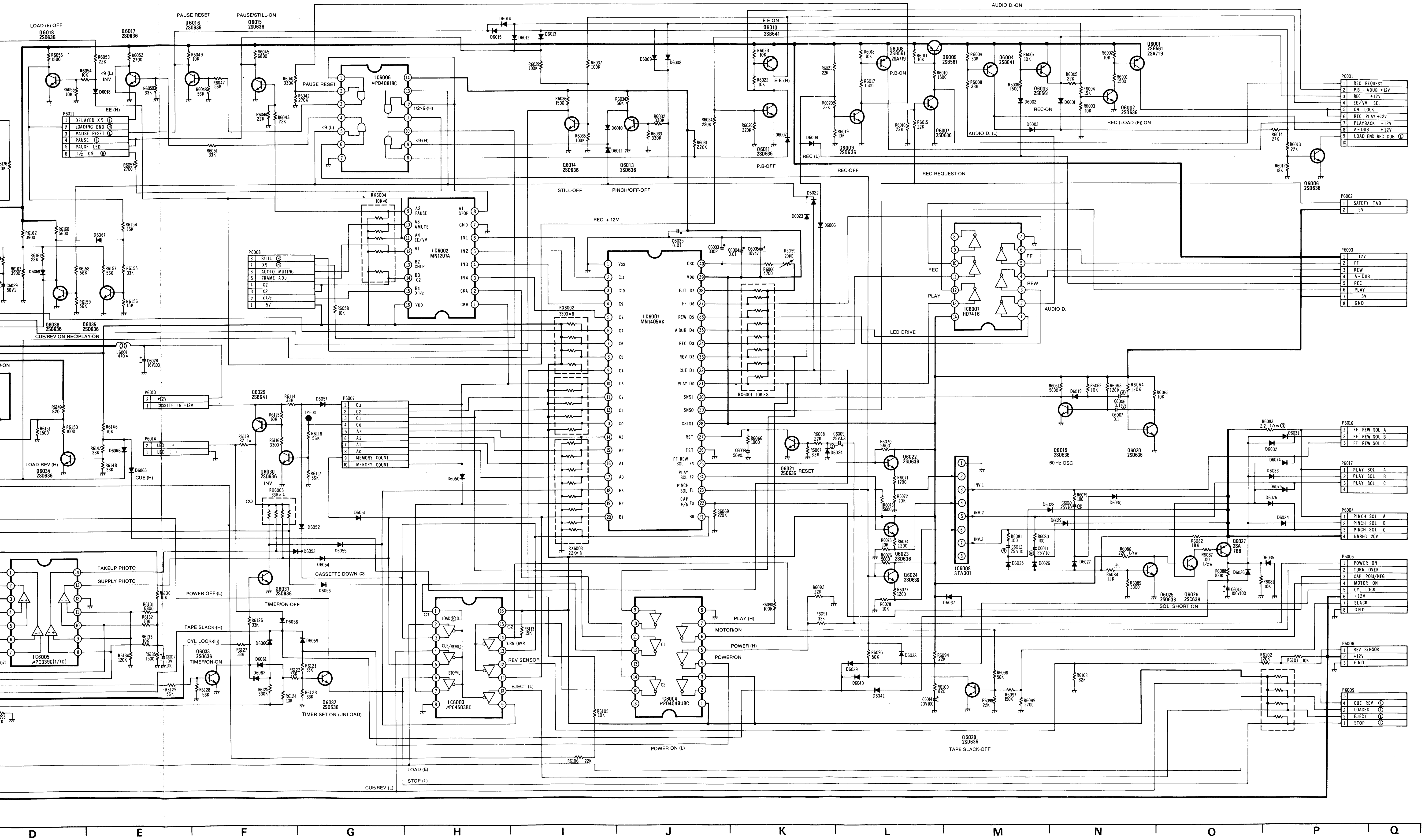
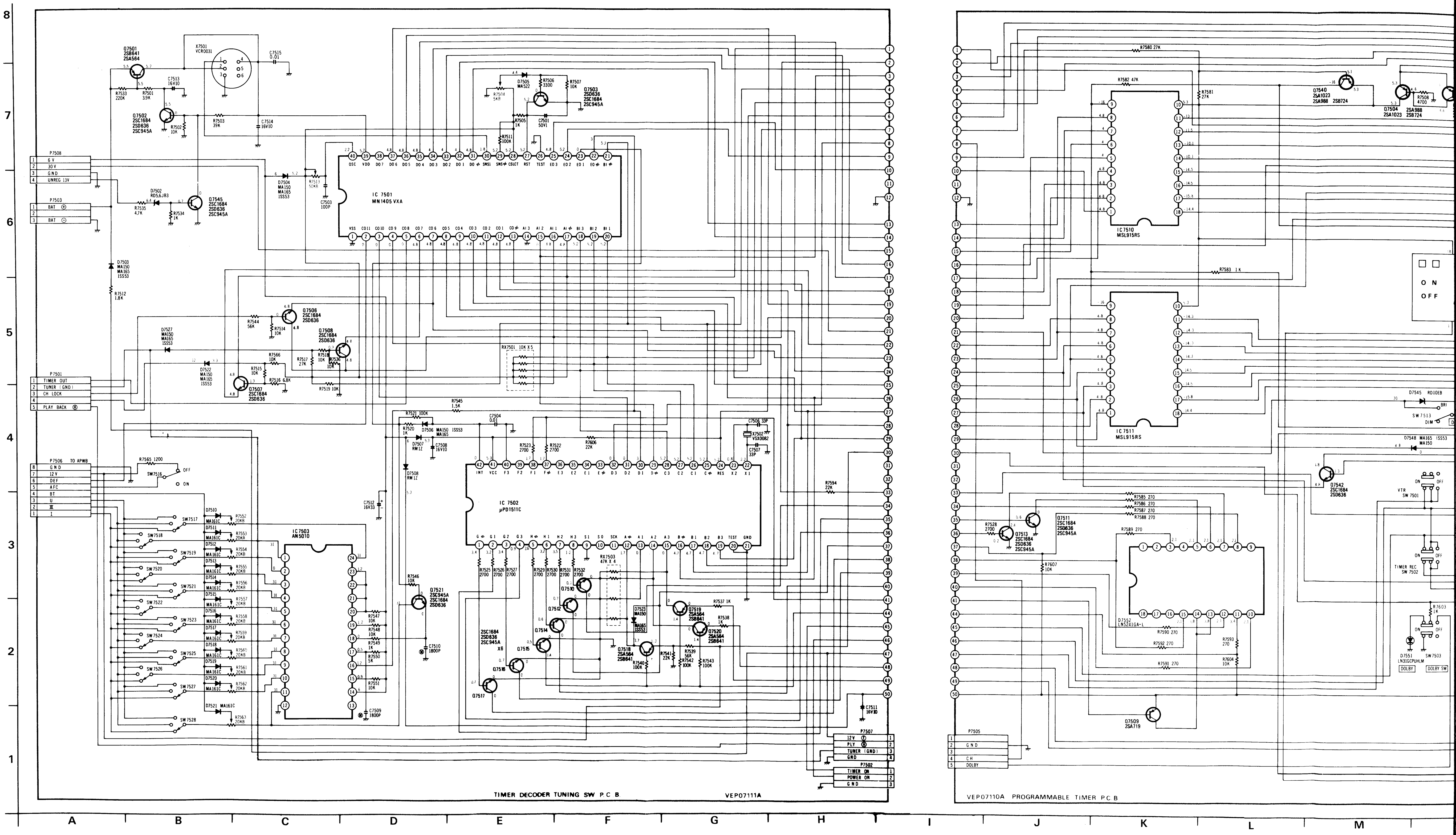
E
F
G
H
I
J
K
L
LOAD (E)-(L)
LOAD (E) OFF
Q6018 2SD636
Q6017 2SD636
PAUSE RESET
Q6016 2SD636
PAUSE/STILL-ON
Q6015 2SD636
Q6045 2SB793
Q6044 2SB793
P6209
REEL
Q6047 2SD636
Q6046 2SD973
Q6043 2SD973
Q6042 2SD636
REV-(H)
FORWARD-(H)
P6011
DELAYED X9
LOADING END
PAUSE RESET
PAUSE
PAUSE LED
1/2 X9
EE (H)
×9 (L) INV
IC6006 μPD4081BC
1/2×9-(H)
×9-(H)
×9 (L)
E-E ON Q6010 2SB641
E-E (H)
STILL-OFF
PINCH/OFF-OFF
Q6014 2SD636
Q6013 2SD636
Q6011 2SD636
P.B-OFF
Q6009 2SD636
REC (L)
REC-OFF
REC +12V
Q6041 2SA768 REEL MOTOR CONTROL
Q6040 2SB641
Q6038 2SD636
REEL MOTOR DRIVE
Q6037 2SD636
Q6036 2SD636
Q6035 2SD636
CUE/REV-ON REC/PLAY-ON
CUE/REV POSI-(L)
Q6039 2SD636 FORWARD-(H)
RX6004 10K×6
IC6002 MN1201A
P6008
STILL
X9
AUDIO MUTING
FRAME ADJ
X2
X1/2
5V
IC6001 MN1405VK
RX6002 3300×8
RX6001 10K×8
RX6003 22K×8
CUE,SHORT REW-ON
IC6009 BA6109
L6001 470μ
P6010
CASSETTE IN +12V
P6014
LED
Q6034 2SD636 LOAD REV-(H)
CUE-(H)
Q6029 2SB641
TP6001
P6007
MEMORY COUNT
Q6030 2SD636 INV
RX6005 33K×4
CO
Q6021 2SD636 RESET
TP6001 0.2V/10msec. div
P6012
LOADING
GND
UNREG 12V
REG 12V
POWER OFF
5V
Q6048 2SD636 DEW LED DRIVE
TAKEUP PHOTO
SUPPLY PHOTO
IC6005 μPC339C(177C)
POWER OFF-(L)
CASSETTE DOWN C3
Q6031 2SD636
TIMER/ON-OFF
TAPE SLACK-(H)
CYL LOCK-(H)
Q6033 2SD636 TIMER/ON-ON
Q6032 2SD636
TIMER SET-ON (UNLOAD)
P6013
DEW SENSOR
TAKE UP PHOTO
CAMERA
DEW LED
TIMER ON
TIMER SET
P6015
SUPPLY PHOTO Tr
IC6003 μPC4503BC
TURN OVER
REV SENSOR
EJECT (L)
IC6004 μPD4049UBC
PLAY (H)
MOTOR/ON
POWER (H)
POWER/ON
POWER ON (L)
LOAD (E)
STOP (L)
CUE/REV (L)

TIC DIAGRAM


LOAD (E) OFF
Q6018
2SD636
Q6017
2SD636
PAUSE RESET
Q6016
2SD636
PAUSE/STILL-ON
Q6015
2SD636
×9 (L)
INV
EE (H)
P6011
1 DELAYED X9 Ⓛ
2 LOADING END Ⓗ
3 PAUSE RESET Ⓛ
4 PAUSE Ⓛ
5 PAUSE LED
6 1/2 X9 Ⓗ
IC6006
μPD4081BC
1/2×9-(H)
×9-(H)
×9 (L)
RX6004
10K×6
A2 PAUSE
A3 AMUTE
A4 EE/VV
B1
B2 CHLP
B3 X2
B4 X1/2
VDD
A1 STOP
GND
IN1
IN2
IN3
IN4
CKA
CKB
IC6002
MN1201A
P6008
8 STILL Ⓗ
7 X9 Ⓗ
6 AUDIO MUTING
5 FRAME ADJ
4 X2
3 X2
2 X1/2
1 5V
Q6036
2SD636
Q6035
2SD636
CUE/REV-ON REC/PLAY-ON
L6001
470μ
C6028
16V100
P6010
2 +12V
1 CASSTTE IN +12V
P6014
2 LED (+)
1 LED (−)
Q6029
2SB641
Q6030
2SD636
INV
TP6001
P6007
1 C3
2 C2
3 C1
4 C0
5 A3
6 A2
7 A1
8 A0
9 MEMORY COUNT
10 MERORY COUNT
RX6005
33K×4
CO
LOAD REV-(H)
Q6034
2SD636
CUE-(H)
STILL-OFF
Q6014
2SD636
Q6013
2SD636
PINCH/OFF-OFF
D6014
D6015
D6012
D6013
E-E ON
Q6010
2SB641
E-E (H)
Q6011
2SD636
P.B-OFF
REC +12V
AUDIO D.-ON
Q6008
2SB561
2SA719
P.B-ON
Q6009
2SD636
Q6005
2SB561
Q6007
2SD636
Q6004
2SB641
Q6003
2SB561
REC-ON
Q6001
2SB561
2SA719
Q6002
2SD636
AUDIO D. (L)
REC (LOAD (E))-ON
REC (L)
REC-OFF
REC REQUEST-ON
Q6006
2SD636
P6001
1 REC REQUEST
2 P.B - ADUB +12V
3 REC +12V
4 EE/VV SEL
5 CH LOCK
6 REC PLAY +12V
7 PLAYBACK +12V
8 A-DUB +12V
9 LOAD END REC DUB Ⓛ
10
P6002
1 SAFETY TAB
2 5V
P6003
1 12V
2 FF
3 REW
4 A-DUB
5 REC
6 PLAY
7 5V
8 GND
IC6007
HD7416
REC
PLAY
FF
REW
AUDIO D.
LED DRIVE
RX6002
3300×8
IC6001
MN1405VK
VSS
C11
C10
C9
C8
C7
C6
C5
C4
C3
C2
C1
C0
A3
A2
A1
A0
B3
B2
B1
OSC
VDD
EJT D7
FF D6
REW D5
A DUB D4
REC D3
REV D2
CUE D1
PLAY D0
SNS1
SNS0
CSLST
RST
TST
FF REW SOL F3
PLAY SOL F2
PINCH SOL F1
CAP P/N F0
B0
RX6003
22K×8
RX6001
10K×8
C6035
0.01
R6059
20KB
Q6021
2SD636
RESET
Q6019
2SD636
60Hz OSC
Q6020
2SD636
P6016
1 FF REW SOL A
2 FF REW SOL B
3 FF REW SOL C
P6017
1 PLAY SOL A
2 PLAY SOL B
3 PLAY SOL C
4
P6004
1 PINCH SOL A
2 PINCH SOL B
3 PINCH SOL C
4 UNREG 20V
P6005
1 POWER ON
2 TURN OVER
3 CAP POSI/NEG
4 MOTOR ON
5 CYL LOCK
6 +12V
7 SLACK
8 GND
Q6022
2SD636
Q6023
2SD636
Q6024
2SD636
IC6008
STA301
INV.1
INV.2
INV.3
Q6027
2SA768
Q6025
2SD638
Q6026
2SC639
SOL. SHORT ON
P6006
1 REV SENSOR
2 +12V
3 GND
P6009
5
4 CUE REV Ⓛ
3 LOADED Ⓛ
2 EJECT Ⓛ
1 STOP Ⓛ
Q6028
2SD636
TAPE SLACK-OFF
TAKEUP PHOTO
SUPPLY PHOTO
IC6005
μPC339C(177C)
POWER OFF-(L)
D6050
D6051
D6052
D6053
D6054
D6055
D6056
CASSETTE DOWN C3
Q6031
2SD636
TIMER/ON-OFF
TAPE SLACK-(H)
CYL LOCK-(H)
Q6033
2SD636
TIMER/ON-ON
Q6032
2SD636
TIMER SET-ON (UNLOAD)
IC6003
μPC4503BC
LOAD (E)(L)
CUE/REV(L)
STOP(L)
TURN OVER
REV SENSOR
EJECT (L)
C1
C2
IC6004
μPD4049UBC
PLAY (H)
MOTOR/ON
POWER (H)
POWER/ON
POWER ON (L)
LOAD (E)
STOP (L)
CUE/REV (L)
D
E
F
G
H
I
J
K
L
M
N
O
P
Q

PROGRAMMABLE TIMER & TIMER DECODER TUNING SW. SCHEMATIC DIAGRAM *NV-7200E/EG*


IC 7501
MN1405 VXA
IC 7502
μPD1511C
IC7503
AN5010
IC 7510
MSL915RS
IC 7511
MSL915RS
X7501
VCR0031
X7502
VSX0082
Q7501
2SB641
2SA564
Q7502
2SC1684
2SD636
2SC945A
Q7503
2SD636
2SC1684
2SC945A
Q7504
2SA1023
2SA988
2SB724
Q7506
2SC1684
2SD636
Q7507
2SC1684
2SD636
Q7508
2SC1684
2SD636
Q7509
2SA719
Q7511
2SC1684
2SD636
2SC945A
Q7513
2SC1684
2SD636
2SC945A
Q7517
Q7516
Q7515
Q7514
Q7512
Q7510
2SC1684
2SD636
2SC945A
X6
Q7518
2SA564
2SB641
Q7519
2SA564
2SB641
Q7520
2SA564
2SB641
Q7521
2SC945A
2SC1684
2SD636
Q7540
2SA1023
2SA988
2SB724
Q7542
2SC1684
2SD636
Q7545
2SC1684
2SD636
2SC945A
P7508
6 V
30 V
GND
UNREG 13V
P7503
BAT ⊕
BAT ⊖
P7501
TIMER OUT
TUNER (GND)
CH LOCK
PLAY BACK ⓔ
P7506
TO APWB
GND
12 V
DEF
AFC
BT
U
III
I
SW7516
OFF
ON
SW7517
SW7518
SW7519
SW7520
SW7521
SW7522
SW7523
SW7524
SW7525
SW7526
SW7527
SW7528
D7510
MA161C
D7521
MA161C
RX7501
10K X 5
RX7503
47K X 4
P7507
12V ⓓ
PLY ⓔ
TUNER (GND)
GND
P7502
TIMER ON
POWER ON
GND
P7505
GND
CH
DOLBY
D7545
RD10EB
SW7513
DIM
D7548
MA165
1SS53
MA150
VTR
SW 7501
TIMER REC
SW 7502
D7551
LN31GCPUHLM
SW7503
DOLBY
DOLBY SW
D7552
LN5241GA-L
ON
OFF
TIMER DECODER TUNING SW P.C.B
VEP07111A
VEP07110A
PROGRAMMABLE TIMER P.C.B
A
B
C
D
E
F
G
H
I
J
K
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M
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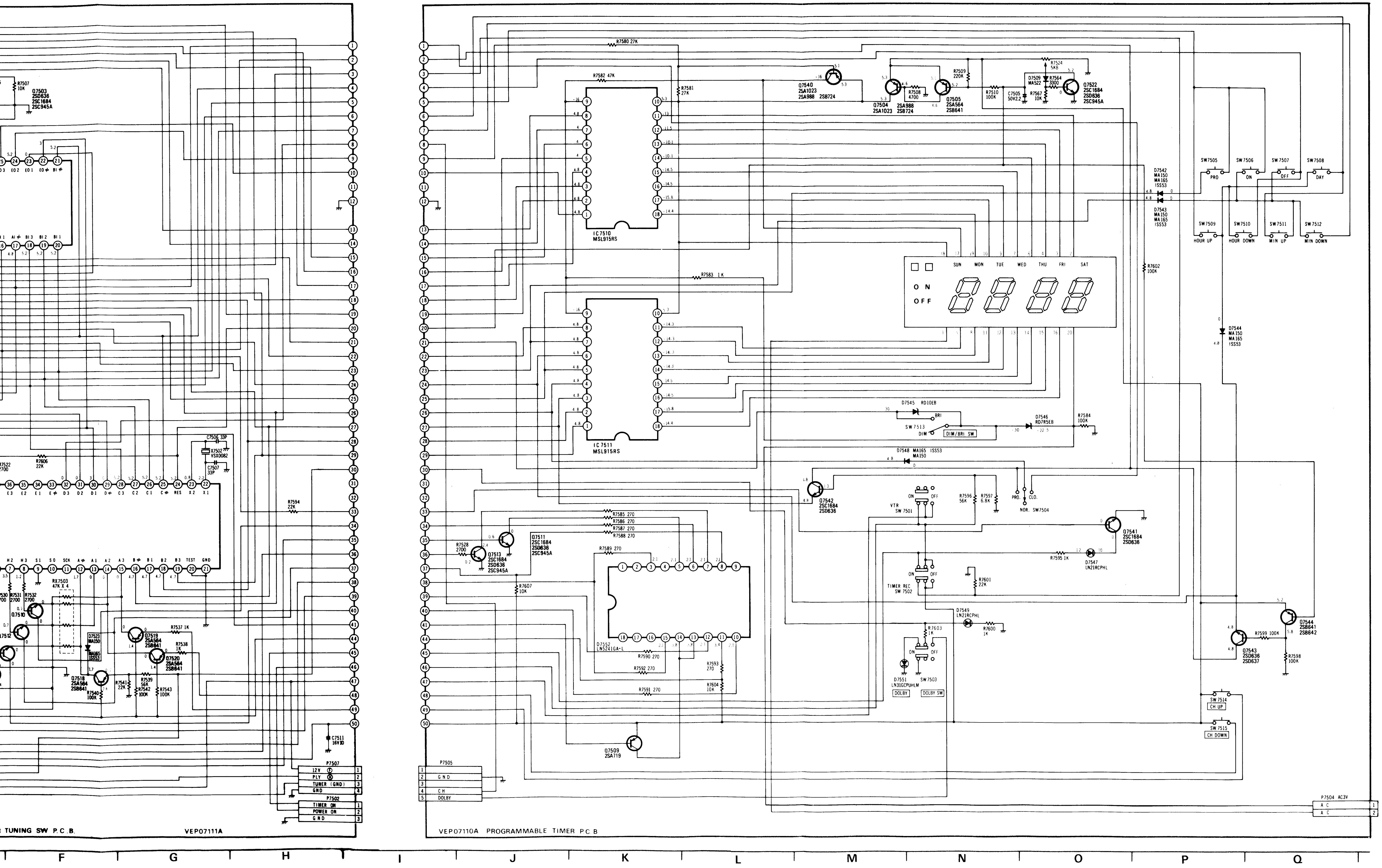
TUNING SW. SCHEMATIC DIAGRAM *NV-7200E/EG*



TUNING SW P.C.B.
VEP07111A
VEP07110A PROGRAMMABLE TIMER P.C.B
IC7510 MSL915RS
IC7511 MSL915RS
D7552 LN5241GA-L
Q7503 2SD636 2SC1684 2SC945A
Q7540 2SA1023 2SA988 2SB724
Q7504 2SA988 2SA1023 2SB724
Q7505 2SA564 2SB641
Q7522 2SC1684 2SD636 2SC945A
Q7511 2SC1684 2SD636 2SC945A
Q7513 2SC1684 2SD636 2SC945A
Q7542 2SC1684 2SD636
Q7541 2SC1684 2SD636
Q7543 2SD636 2SD637
Q7544 2SB641 2SB642
Q7509 2SA719
Q7519 2SA564 2SB641
Q7520 2SA564 2SB641
Q7518 2SA564 2SB641
Q7510
Q7512
D7521 MA150
D7542 MA150 MA165 1SS53
D7543 MA150 MA165 1SS53
D7544 MA150 MA165 1SS53
D7545 RD10EB
D7546 RD7R5EB
D7547 LN21RCPHL
D7548 MA165 1SS53 MA150
D7549 LN21RCPHL
D7551 LN31GCPUHLM
SW7505 PRO
SW7506 ON
SW7507 OFF
SW7508 DAY
SW7509 HOUR UP
SW7510 HOUR DOWN
SW7511 MIN UP
SW7512 MIN DOWN
SW7513 DIM BRI DIM/BRI SW
SW7504 PRO. CLO. NOR.
VTR SW 7501 ON OFF
TIMER REC SW 7502 ON OFF
SW 7503 DOLBY
SW 7514 CH UP
SW 7515 CH DOWN
SUN MON TUE WED THU FRI SAT
ON
OFF
P7505 GND CH DOLBY
P7504 AC3V A C A C
P7507 12V PLY TUNER (GND) GND
P7502 TIMER ON POWER ON GND
X7501 VSX0082
C7506 33P
C7507 33P
C7505 50V2.2
C7511 16V10
RX7503 47K X 4
R7580 27K
R7582 47K
R7581 27K
R7583 1K
R7584 100K
R7585 270
R7586 270
R7587 270
R7588 270
R7589 270
R7590 270
R7591 270
R7592 270
R7593 270
R7594 22K
R7595 1K
R7596 56K
R7597 6.8K
R7598 100K
R7599 100K
R7600 1K
R7601 22K
R7602 100K
R7603 1K
R7604 10K
R7606 22K
R7607 10K
R7507 10K
R7508 4700
R7509 220K
R7510 100K
R7524 5K6
R7528 2700
R7537 1K
R7538 1K
R7539 56K
R7540 100K
R7541 22K
R7542 100K
R7543 100K
R7564 3300
R7567 10K
E3 E2 E1 E D3 D2 D1 D C3 C2 C1 C RES X2 X1
H2 H3 S1 S0 SCK A A1 A2 A3 B B1 B2 B3 TEST GND
D3 EO2 EO1 EO BI
A1 BI3 BI2 BI1
F
G
H
I
J
K
L
M
N
O
P
Q

Programmable Timer C.B.A	
Q7501	B-7
Q7502	B-7
Q7503	E-7
Q7504	L-7
Q7505	L-7
Q7506	C-5
Q7507	C-4
Q7508	D-5
Q7509	K-1
Q7510	F-3
Q7511	J-3
Q7512	F-2
Q7513	J-3
Q7514	F-2
Q7515	E-2
Q7516	E-2
Q7517	E-2
Q7518	F-2
Q7519	G-2
Q7520	G-2
Q7521	D-2
Q7522	O-7
Q7540	M-7
Q7541	P-3
Q7542	M-4
Q7543	P-2
Q7546	Q-3
Q7509	K-1
Q751	E-2
IC7501	E-6
IC7502	F-3
IC7503	C-2
IC7510	K-6

P7501 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	Timer On	P6013-3 System Control
2	Tuner/Camera	P3005-5 Luminance, Chrominance & Audio
3	CH Lock	P6001-5 System Control
4	Rec Request	P6001-1 System Control
5	P.B/A. Dub 12V	P6001-2 System Control

P7502 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	Timer Set	P6013-2 Timer
2	Power On	P6005-1 System Control
3	—	— —

P7503 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	Reg 6V	— Back Up
2	—	— —
3	GND	— Back Up

P7504 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	AC 3V	— Power Transformer
2	AC 3V	— Power Transformer

P7505 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	Dolby LED	— Operation & Infrared
2	GND	— Operation & Infrared
3	—	— —
4	CH	— Operation & Infrared
5	Dolby SW	— Operation & Infrared

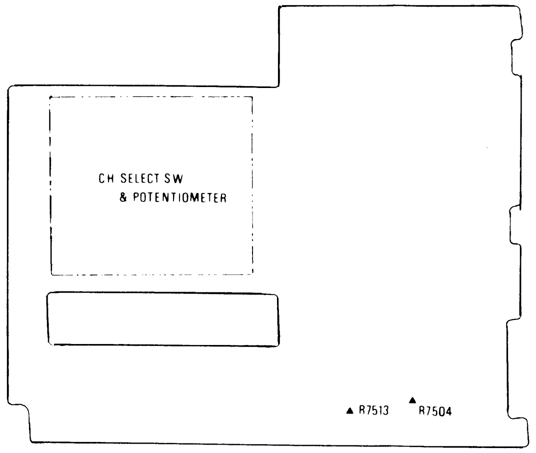
P7506 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	VL	— TV-Demodu
2	VH	— TV-Demodu
3	U	— TV-Demodu
4	BT	— TV-Demodu
5	AFT	— TV-Demodu
6	DEF	— TV-Demodu
7	12V	— TV-Demodu
8	GND	— TV-Demodu

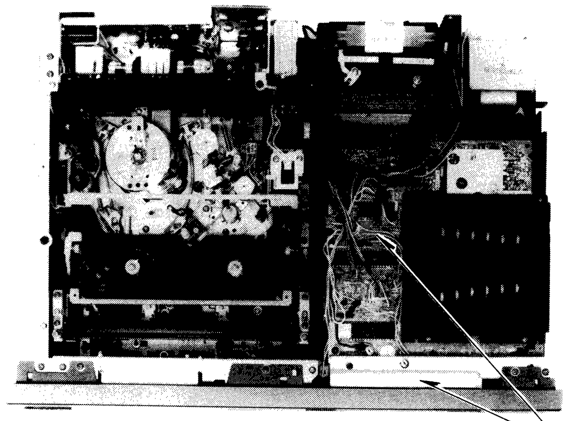
P7507 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	VTR LED	— TV-Demodu
2	TV/VTR SW	— TV-Demodu
3	12V (F)	— TV-Demodu
4	P.B A Dub 12V	— TV-Demodu
5	GND	— TV-Demodu

P7508 (Timer C.B.A)		
PIN NO.	SIGNAL NAME	DESTINATION
1	6V	P1005-2 Power Supply
2	−30V	P1005-3 Power Supply
3	GND	P1003-4,5 Power Supply
4	13V Unreg	P1005-1 Power Supply

PROGRAMMABLE TIMER & TIMER DECODER TUNING SW. BOARD

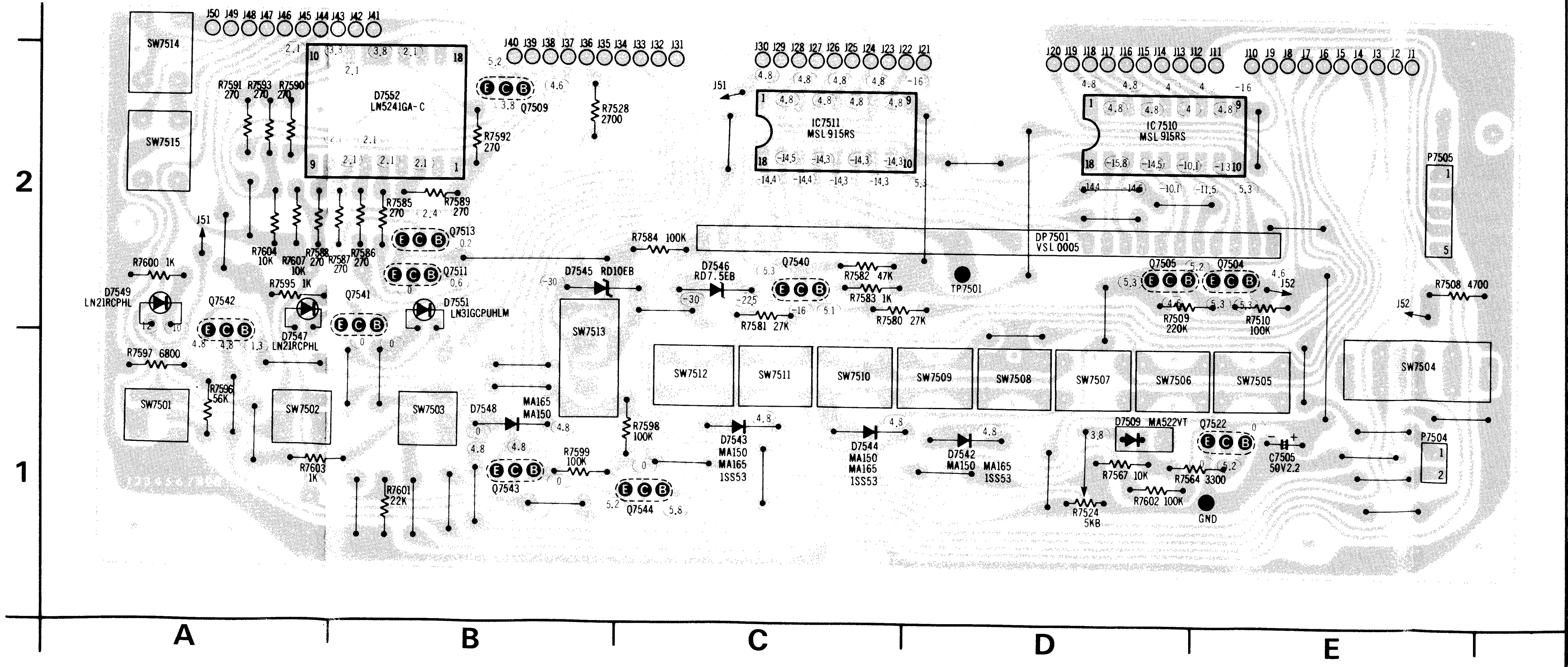
NV-7200E/EG (VEP07110A/VEP07111A)


CH SELECT SW
& POTENTIOMETER
R7513
R7504



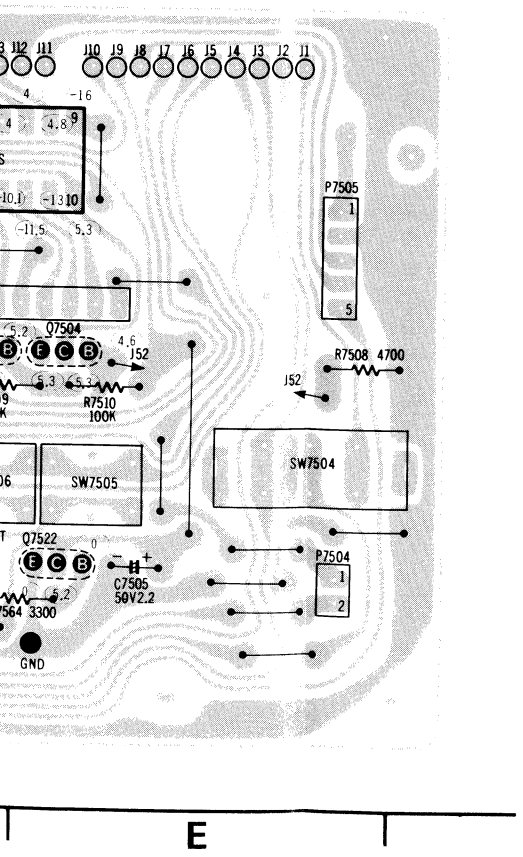
Programmable Timer Board

Timer Operation C.B.A.	
Q7504	E-2
Q7505	D-2
Q7509	B-2
Q7511	B-2
Q7513	B-2
Q7522	E-1
Q7540	C-2
Q7541	B-2
Q7542	A-2
Q7543	B-1
Q7544	E-2
IC7510	D-2
IC7511	C-2

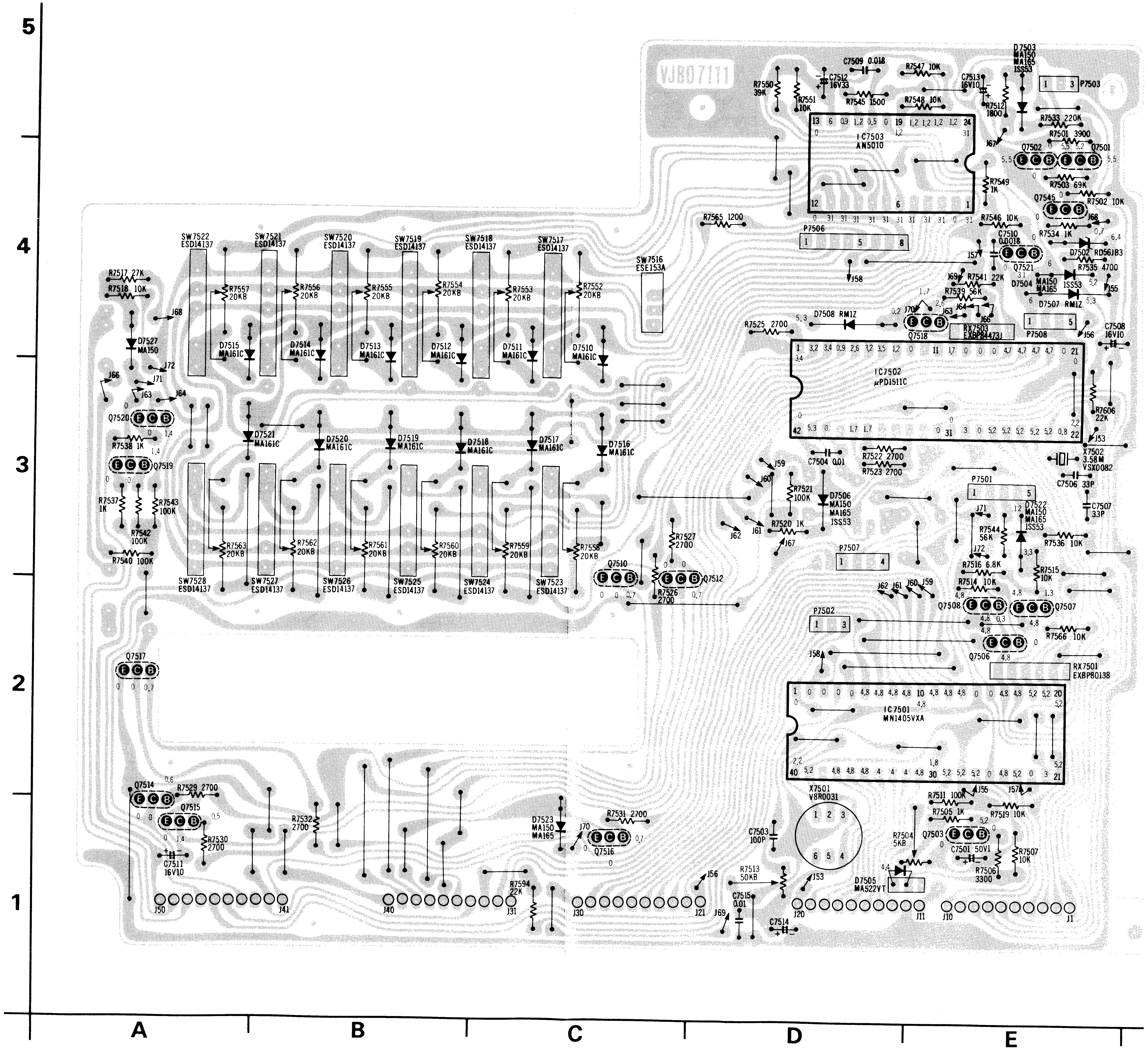

2
1
A
B
C
D
E
SW7514
SW7515
SW7501
SW7502
SW7503
SW7513
SW7512
SW7511
SW7510
SW7509
SW7508
SW7507
SW7506
SW7505
SW7504
D7552 LN5241GA-C
IC7511 MSL915RS
IC7510 MSL915RS
DP7501 VSL0005
Q7509
Q7513
Q7511
Q7541
Q7542
Q7543
Q7544
Q7540
Q7505
Q7504
Q7522
D7549 LN21RCPHL
D7547 LN21RCPHL
D7551 LN31GCPUHLM
D7545 RD10EB
D7546 RD7.5EB
D7548 MA165 MA150
D7543 MA150 MA165 1SS53
D7544 MA150 MA165 1SS53
D7542 MA150 MA165 1SS53
D7509 MA522VT
C7505 50V2.2
R7600 1K
R7597 6800
R7596 56K
R7603 1K
R7601 22K
R7604 10K
R7607 270
R7588 10K
R7587 270
R7586 270
R7595 1K
R7585 270
R7589 270
R7591 270
R7593 270
R7590 270
R7592 270
R7528 2700
R7584 100K
R7582 47K
R7583 1K
R7581 27K
R7580 27K
R7598 100K
R7599 100K
R7509 220K
R7510 100K
R7508 4700
R7567 10K
R7564 3300
R7602 100K
R7524 5KB
TP7501
GND
P7505
P7504
J51
J52

ARD

Timer C.B.A.	
Q7501	E-4
Q7502	E-4
Q7503	E-1
Q7506	E-2
Q7507	E-2
Q7508	E-2
Q7510	C-2
Q7512	C-2
Q7514	A-1
Q7515	A-1
Q7516	C-1
Q7517	A-2
Q7518	D-4
Q7519	A-3
Q7520	A-3
Q7521	E-4
Q7545	E-4
IC7501	E-2
IC7502	E-3
IC7503	E-5

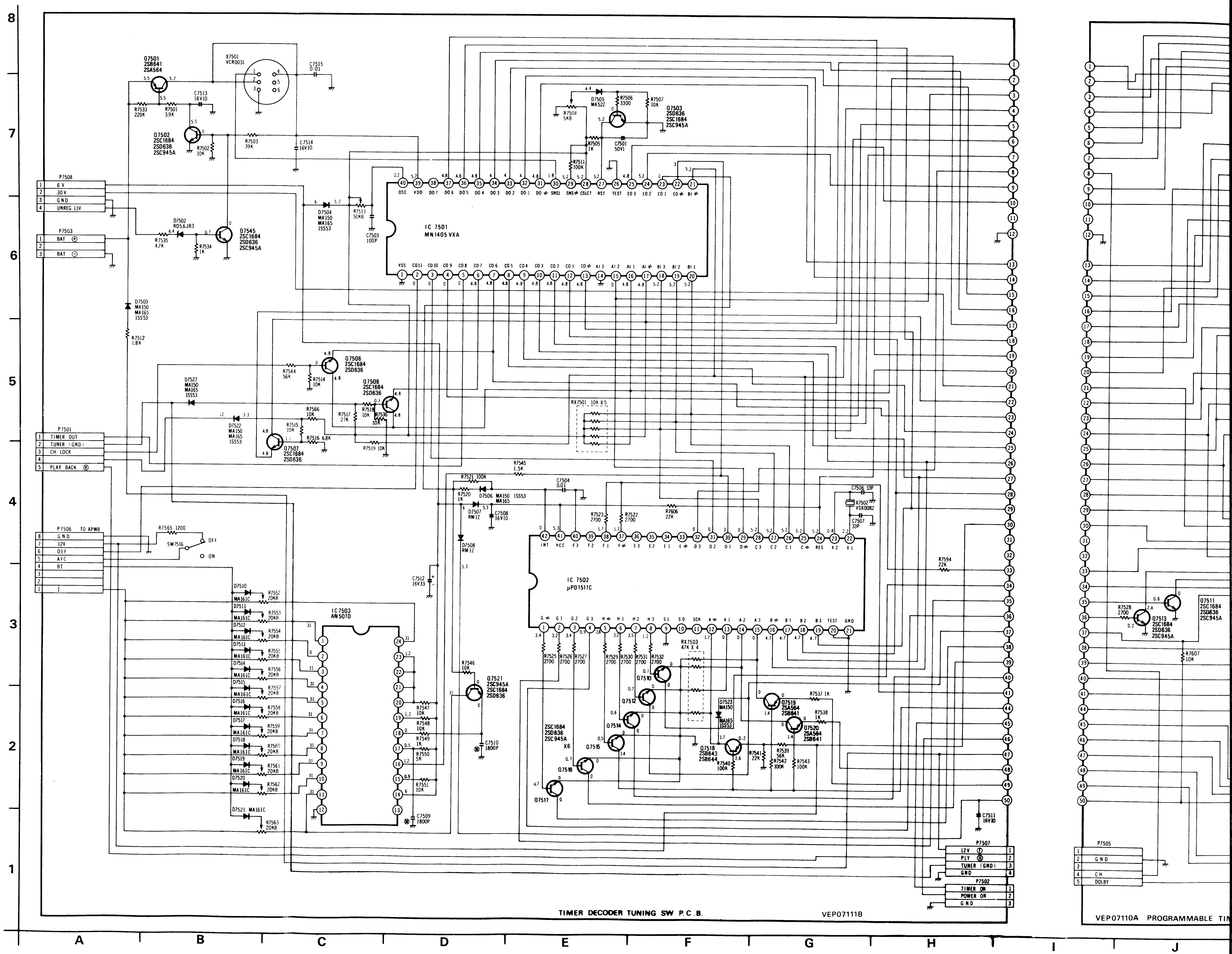


J10 J9 J8 J7 J6 J5 J4 J3 J2 J1
P7505
Q7504
J52
R7508 4700
R7510 100K
SW7505
SW7504
Q7522
C7505 50V2.2
P7504
3300
GND
E



5
4
3
2
1
A
B
C
D
E
VJB07111
SW7522 ESD14137
SW7521 ESD14137
SW7520 ESD14137
SW7519 ESD14137
SW7518 ESD14137
SW7517 ESD14137
SW7516 ESE153A
SW7528 ESD14137
SW7527 ESD14137
SW7526 ESD14137
SW7525 ESD14137
SW7524 ESD14137
SW7523 ESD14137
IC7503 AN5010
IC7502 μPD1511C
IC7501 MN1405VXA
X7501 V8R0031
X7502 3.58M VSX0082
Q7501
Q7502
Q7503
Q7506
Q7507
Q7508
Q7510
Q7512
Q7514
Q7515
Q7516
Q7517
Q7518
Q7519
Q7520
Q7521
Q7545
D7503 MA150 MA165 1SS53
D7502 RD56JB3
D7504 MA150 MA165
D7507 RM1Z
D7508 RM1Z
D7506 MA150 MA165 1SS53
D7522 MA150 MA165 1SS53
D7523 MA150 MA165
D7505 MA522VT
D7527 MA150
P7501
P7502
P7503
P7506
P7507
P7508
RX7501 EXBP80138
RX7503 EXBP84473J
J1
J10
J11
J20
J21
J30
J31
J40
J41
J50
GND

PROGRAMMABLE TIMER & TIMER DEODER TUNING SW. SCHEMATIC DIAGRAM *NV-7200B*



8
7
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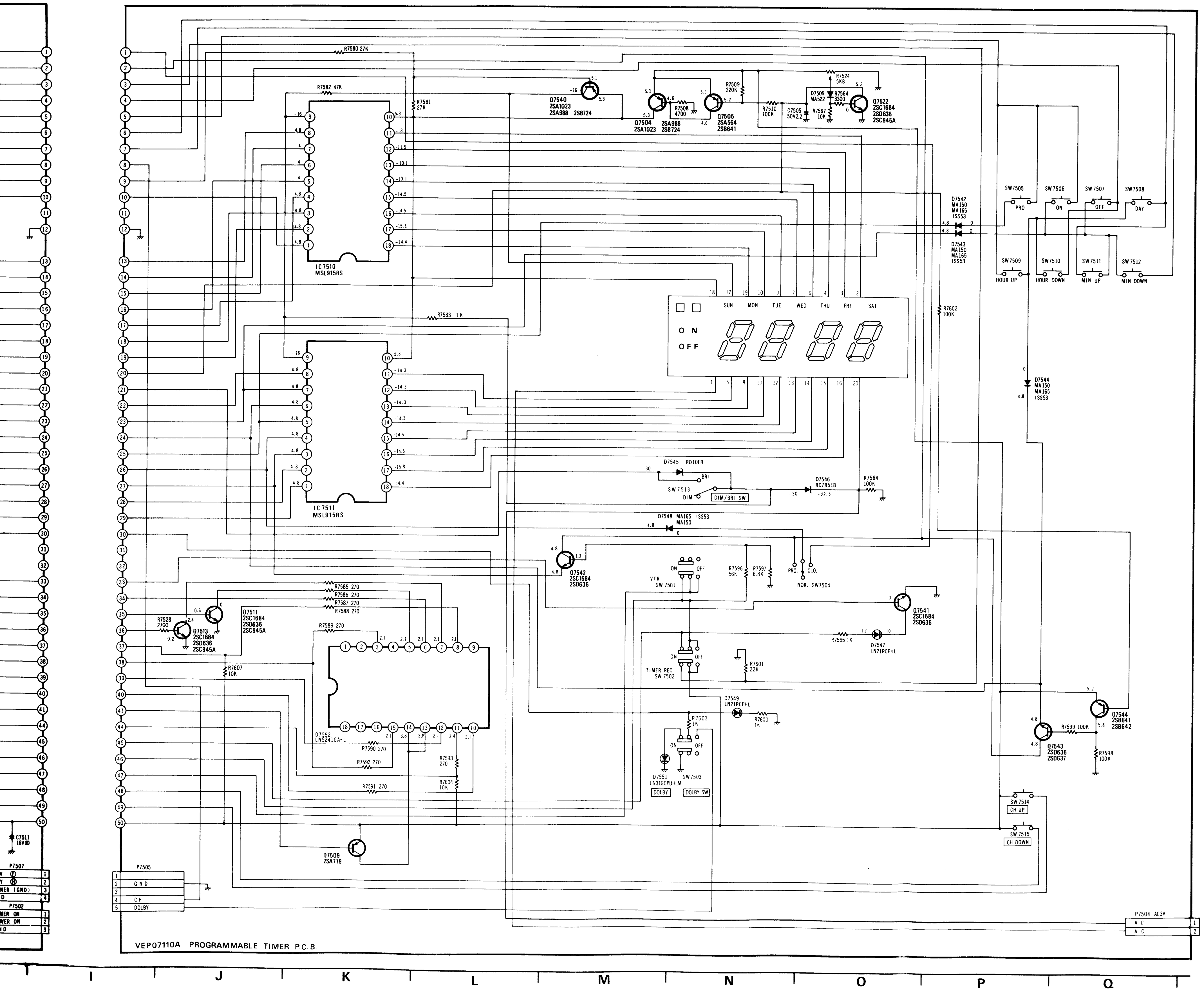
2
1
A
B
C
D
E
F
G
H
I
J
Q7501 2SB641 2SA564
Q7502 2SC1684 2SD636 2SC945A
X7501 VCR0031
C7515 0.01
C7513 16V10
C7514 16V10
R7533 220K
R7501 3.9K
R7502 10K
R7503 39K
P7508
6V
30V
GND
UNREG 13V
P7503
BAT ⊕
BAT ⊖
D7502 RD5.6JB3
R7535 4.7K
R7534 1K
Q7545 2SC1684 2SD636 2SC945A
D7503 MA150 MA165 1SS53
R7512 1.8K
D7504 MA150 MA165 1SS53
R7513 50KB
C7503 100P
IC 7501 MN1405 VXA
D7505 MA522
R7506 3300
R7507 10K
R7504 5KB
Q7503 2SD636 2SC1684 2SC945A
R7505 1K
C7501 50V1
R7511 100K
OSC VDD DO7 DO6 DO5 DO4 DO3 DO2 DO1 DO0 SNS1 SNS0 CSLCT RST TEST EO3 EO2 EO1 EO0 BI0
VSS CO11 CO10 CO9 CO8 CO7 CO6 CO5 CO4 CO3 CO2 CO1 CO0 AI3 AI2 AI1 AI0 BI3 BI2 BI1
Q7506 2SC1684 2SD636
R7544 56K
R7514 10K
Q7508 2SC1684 2SD636
D7527 MA150 MA165 1SS53
D7522 MA150 MA165 1SS53
R7566 10K
R7515 10K
R7516 6.8K
R7517 27K
R7518 10K
R7536 10K
R7519 10K
Q7507 2SC1684 2SD636
RX7501 10K X5
P7501
TIMER OUT
TUNER (GND)
CH LOCK
PLAY BACK Ⓡ
R7545 1.5K
R7521 100K
R7520 1K
D7506 MA150 1SS53 MA165
D7507 RM1Z
C7508 16V10
D7508 RM1Z
C7504 0.01
R7523 2700
R7522 2700
R7606 22K
C7506 33P
X7502 VSX0082
C7507 33P
IC 7502 μPD1511C
INT VCC F3 F2 F1 F0 E3 E2 E1 E0 D3 D2 D1 D0 C3 C2 C1 C0 RES X2 X1
G0 G1 G2 G3 H0 H1 H2 H3 SI SO SCK A0 A1 A2 A3 B0 B1 B2 B3 TEST GND
P7506 TO APWB
GND
12V
DEF
AFC
BT
R7565 1200
SW7516
OFF
ON
C7512 16V33
IC7503 AN5010
D7510 – D7521 MA161C
R7552 – R7563 20KB
R7546 10K
Q7521 2SC945A 2SC1684 2SD636
R7547 10K
R7548 10K
R7549 1K
R7550 5K
R7551 10K
C7510 1800P
C7509 1800P
R7525 2700
R7526 2700
R7527 2700
R7529 2700
R7530 2700
R7531 2700
R7532 2700
RX7503 47K X4
Q7510 Q7512 Q7514 Q7515 Q7516 Q7517
2SC1684 2SD636 2SC945A X6
D7523 MA150 MA165 1SS53
Q7519 2SA564 2SB641
Q7520 2SA564 2SB641
R7537 1K
R7538 1K
Q7518 2SB643 2SB644
R7540 100K
R7541 22K
R7539 56K
R7542 100K
R7543 100K
R7594 22K
C7511 16V10
P7507
12V Ⓢ
PLY Ⓡ
TUNER (GND)
GND
P7502
TIMER ON
POWER ON
GND
TIMER DECODER TUNING SW P.C.B.
VEP07111B
Q7511 2SC1684 2SD636 2SC945A
Q7513 2SC1684 2SD636 2SC945A
R7528 2700
R7607 10K
P7505
GND
CH
DOLBY
VEP07110A PROGRAMMABLE TI

IAGRAM *NV-7200B*



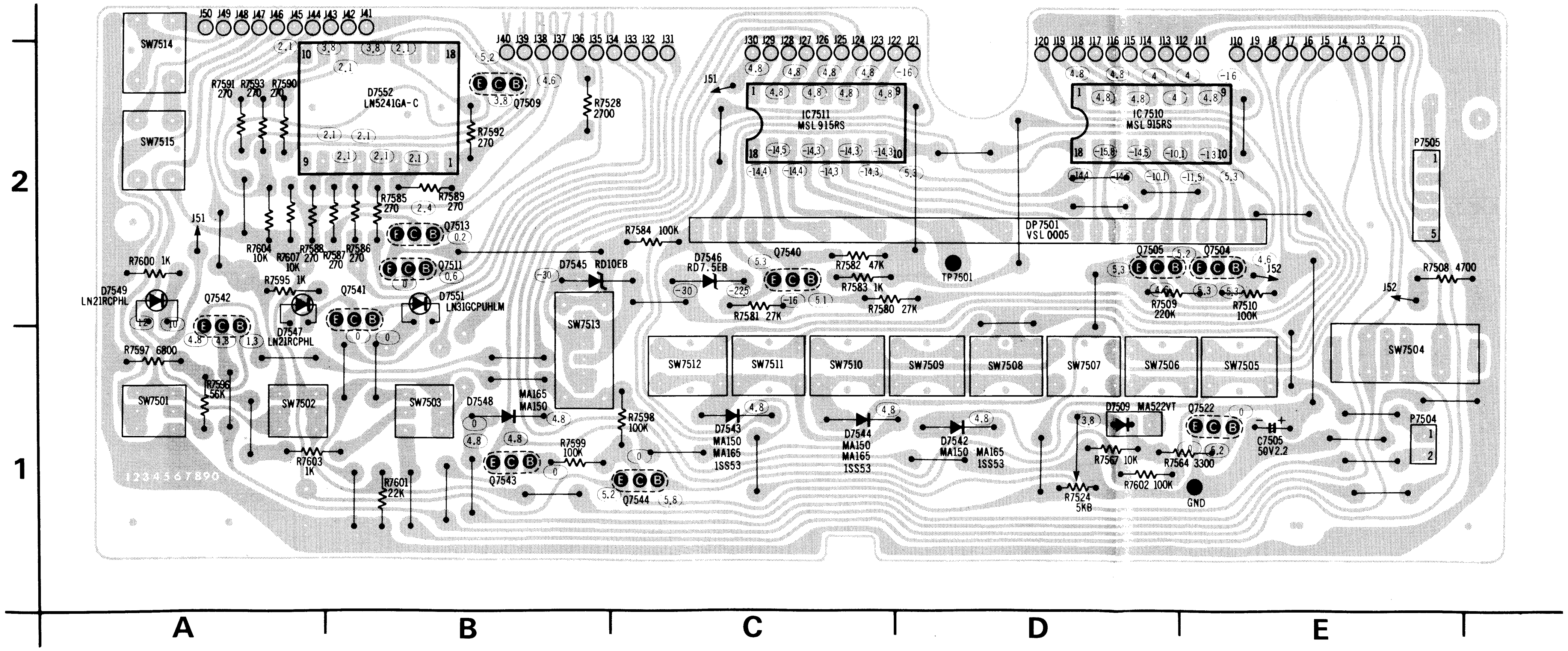
R7580 27K
R7582 47K
R7581 27K
IC7510 MSL915RS
IC7511 MSL915RS
R7583 1K
Q7540 2SA1023 2SA988 2SB724
Q7504 2SA1023 2SA988 2SB724
R7508 4700
Q7505 2SA564 2SB641
R7509 220K
R7510 100K
C7505 50V2.2
D7509 MA522
R7567 10K
R7524 5K6
R7564 3300
Q7522 2SC1684 2SD636 2SC945A
D7542 MA150 MA165 1SS53
D7543 MA150 MA165 1SS53
SW7505 PRO
SW7506 ON
SW7507 OFF
SW7508 DAY
SW7509 HOUR UP
SW7510 HOUR DOWN
SW7511 MIN UP
SW7512 MIN DOWN
R7602 100K
SUN MON TUE WED THU FRI SAT
ON
OFF
D7544 MA150 MA165 1SS53
D7545 RD10EB
BRI
SW7513 DIM
DIM/BRI SW
D7546 RD7R5EB
R7584 100K
D7548 MA165 1SS53 MA150
Q7542 2SC1684 2SD636
VTR SW7501
R7596 56K
R7597 6.8K
PRO. CLO.
NOR. SW7504
Q7541 2SC1684 2SD636
R7595 1K
D7547 LN21RCPHL
TIMER REC SW7502
R7601 22K
D7549 LN21RCPHL
R7600 1K
R7603 1K
D7551 LN31GCPUHLM
SW7503
DOLBY
DOLBY SW
R7585 270
R7586 270
R7587 270
R7588 270
R7589 270
R7528 2700
Q7513 2SC1684 2SD636 2SC945A
Q7511 2SC1684 2SD636 2SC945A
R7607 10K
D7552 LN524IGA-L
R7590 270
R7592 270
R7593 270
R7604 10K
R7591 270
Q7509 2SA719
Q7544 2SB641 2SB642
R7599 100K
Q7543 2SD636 2SD637
R7598 100K
SW7514 CH UP
SW7515 CH DOWN
C7511 16V10
P7507
TIMER (GND)
P7502
P7505
GND
CH
DOLBY
P7504 AC3V
AC
AC
VEP07110A PROGRAMMABLE TIMER P.C.B
I J K L M N O P Q

Programmable Timer C.B.A	
Q7501	B-7
Q7502	B-7
Q7503	E-7
Q7504	L-7
Q7505	L-7
Q7506	C-5
Q7507	C-4
Q7508	D-5
Q7509	K-1
Q7510	F-3
Q7511	J-3
Q7512	F-2
Q7513	J-3
Q7514	F-2
Q7515	E-2
Q7516	E-2
Q7517	E-2
Q7518	F-2
Q7519	G-2
Q7520	G-2
Q7521	D-2
Q7522	O-7
Q7540	M-7
Q7541	P-3
Q7542	M-4
Q7543	P-2
Q7546	Q-3
Q7509	K-1
Q751	E-2
IC7501	E-6
IC7502	F-3
IC7503	C-2
IC7510	K-6

PROGRAMMABLE TIMER & TIMER DECODER TUNING SW. BOARD
NV-7200B (VEP07110A/VEP07111B)

Timer Operation C.B.A.	
Q7504	E-2
Q7505	D-2
Q7509	B-2
Q7511	B-2
Q7513	B-2
Q7522	E-1
Q7540	C-2
Q7541	B-2
Q7542	A-2
Q7543	B-1
Q7544	E-2
IC7510	D-2
IC7511	C-2

Timer C.B.A.	
Q7501	E-4
Q7502	E-4
Q7503	E-1
Q7506	E-2
Q7507	E-2
Q7508	E-2
Q7510	C-2
Q7512	C-2
Q7514	A-1
Q7515	A-1
Q7516	C-1
Q7517	A-2
Q7518	D-4
Q7519	A-3
Q7520	A-3
Q7521	E-4
Q7545	E-4
IC7501	E-2
IC7502	E-3
IC7503	E-5



2
1
A
B
C
D
E
SW7514
SW7515
SW7501
SW7502
SW7503
SW7513
SW7512
SW7511
SW7510
SW7509
SW7508
SW7507
SW7506
SW7505
SW7504
D7552 LN5241GA-C
IC7511 MSL 915RS
IC7510 MSL 915RS
DP7501 VSL 0005
D7549 LN21RCPHL
D7547 LN21RCPHL
D7551 LN31GCPUHLM
D7545 RD10EB
D7546 RD7.5EB
D7548 MA165 MA150
D7543 MA150 MA165 1SS53
D7544 MA150 MA165 1SS53
D7542 MA150 MA165 1SS53
D7509 MA522VT
Q7542
Q7541
Q7511
Q7513
Q7509
Q7540
Q7543
Q7544
Q7505
Q7504
Q7522
C7505 50V2.2
TP7501
GND
P7505
P7504
J51
J52
R7600 1K
R7597 6800
R7596 56K
R7603 1K
R7601 22K
R7599 100K
R7598 100K
R7584 100K
R7582 47K
R7583 1K
R7581 27K
R7580 27K
R7528 2700
R7592 270
R7589 270
R7585 270
R7591 270
R7593 270
R7590 270
R7604 10K
R7607 270
R7588 10K
R7587 270
R7586 270
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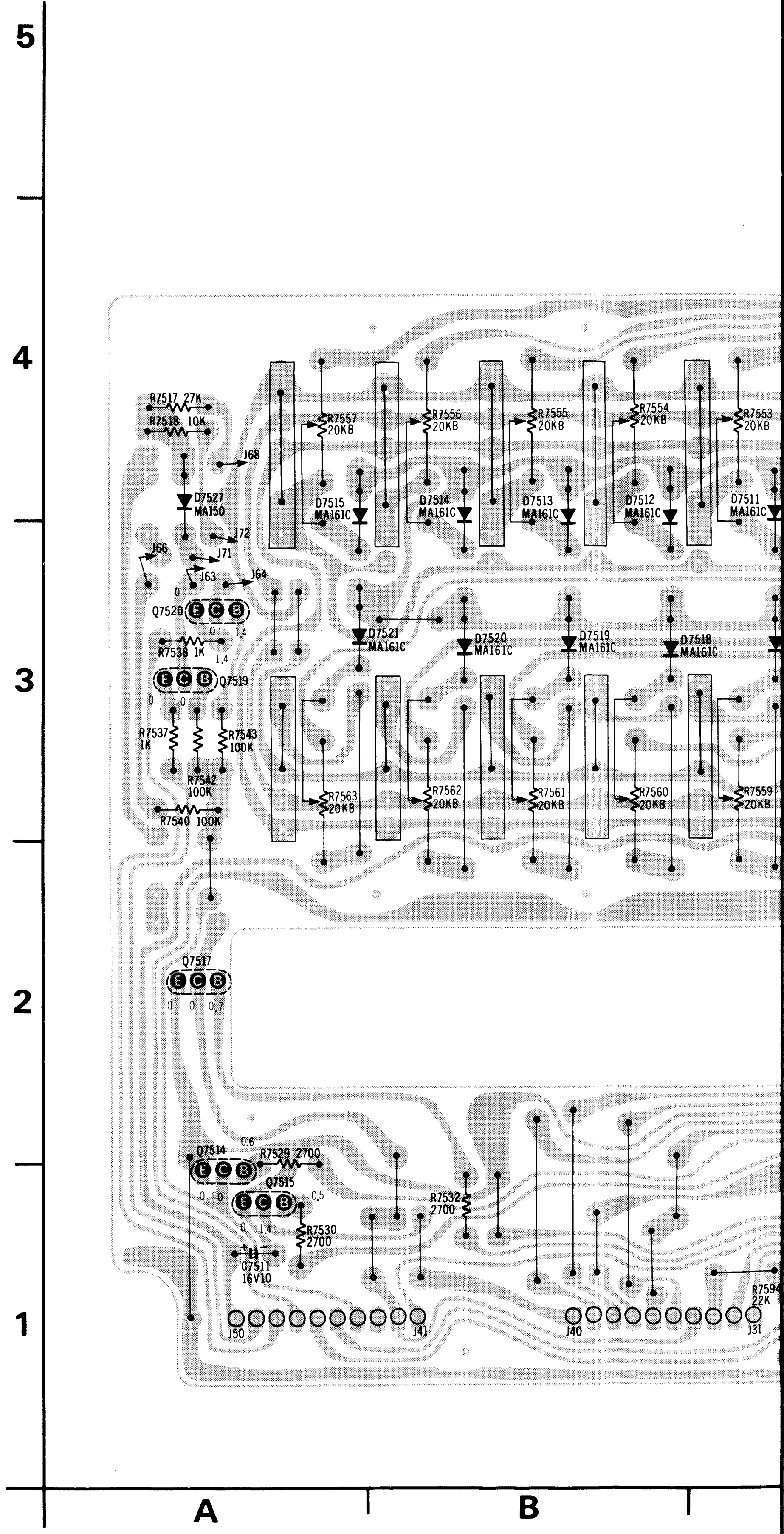
R7509 220K
R7510 100K
R7508 4700
R7567 10K
R7564 3300
R7602 100K
R7524 5KB

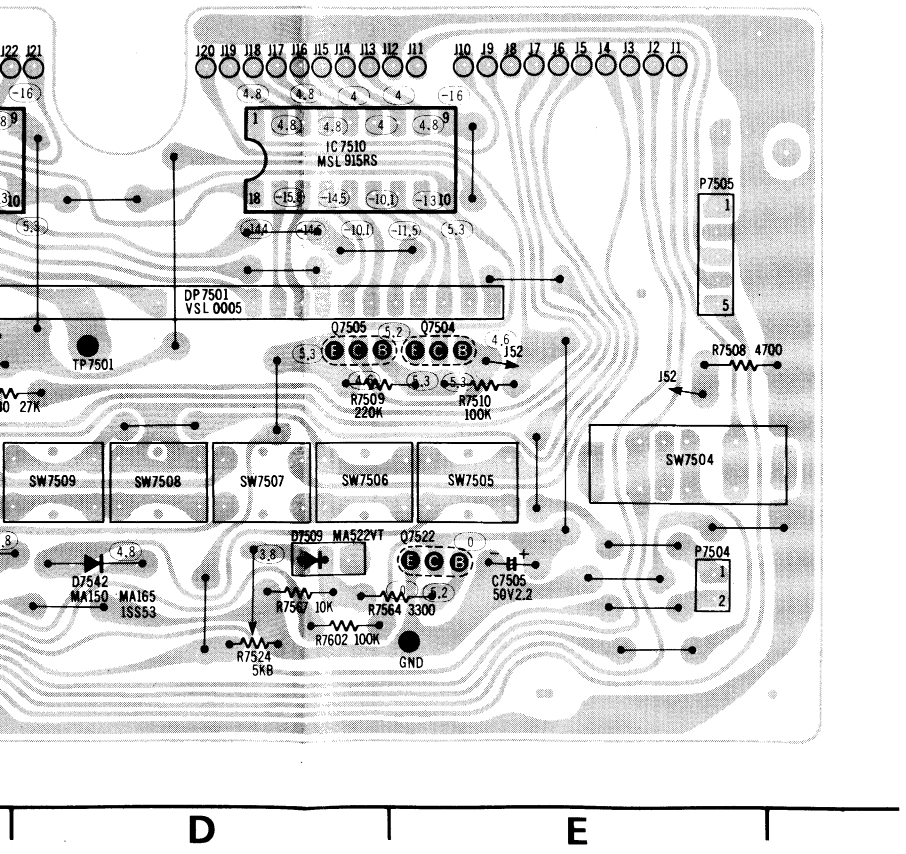


5
4
3
2
1
A
B
R7517 27K
R7518 10K
R7557 20KB
R7556 20KB
R7555 20KB
R7554 20KB
R7553 20KB
D7527 MA150
D7515 MA161C
D7514 MA161C
D7513 MA161C
D7512 MA161C
D7511 MA161C
D7521 MA161C
D7520 MA161C
D7519 MA161C
D7518 MA161C
Q7520
Q7519
Q7517
Q7514
Q7515
R7538 1K
R7537 1K
R7543 100K
R7542 100K
R7540 100K
R7563 20KB
R7562 20KB
R7561 20KB
R7560 20KB
R7559 20KB
R7529 2700
R7530 2700
R7532 2700
C7511 16V10
J50
J41
J40
J31

UNING SW. BOARD

Timer Operation C.B.A.	
Q7504	E-2
Q7505	D-2
Q7509	B-2
Q7511	B-2
Q7513	B-2
Q7522	E-1
Q7540	C-2
Q7541	B-2
Q7542	A-2
Q7543	B-1
Q7544	E-2
IC7510	D-2
IC7511	C-2

Timer C.B.A.	
Q7501	E-4
Q7502	E-4
Q7503	E-1
Q7506	E-2
Q7507	E-2
Q7508	E-2
Q7510	C-2
Q7512	C-2
Q7514	A-1
Q7515	A-1
Q7516	C-1
Q7517	A-2
Q7518	D-4
Q7519	A-3
Q7520	A-3
Q7521	E-4
Q7545	E-4
IC7501	E-2
IC7502	E-3
IC7503	E-5



IC7510
MSL 915RS
DP7501
VSL 0005
TP7501
Q7505
Q7504
R7509 220K
R7510 100K
R7508 4700
P7505
SW7509
SW7508
SW7507
SW7506
SW7505
SW7504
D7542 MA150 MA165 1SS53
D7509 MA522VT
Q7522
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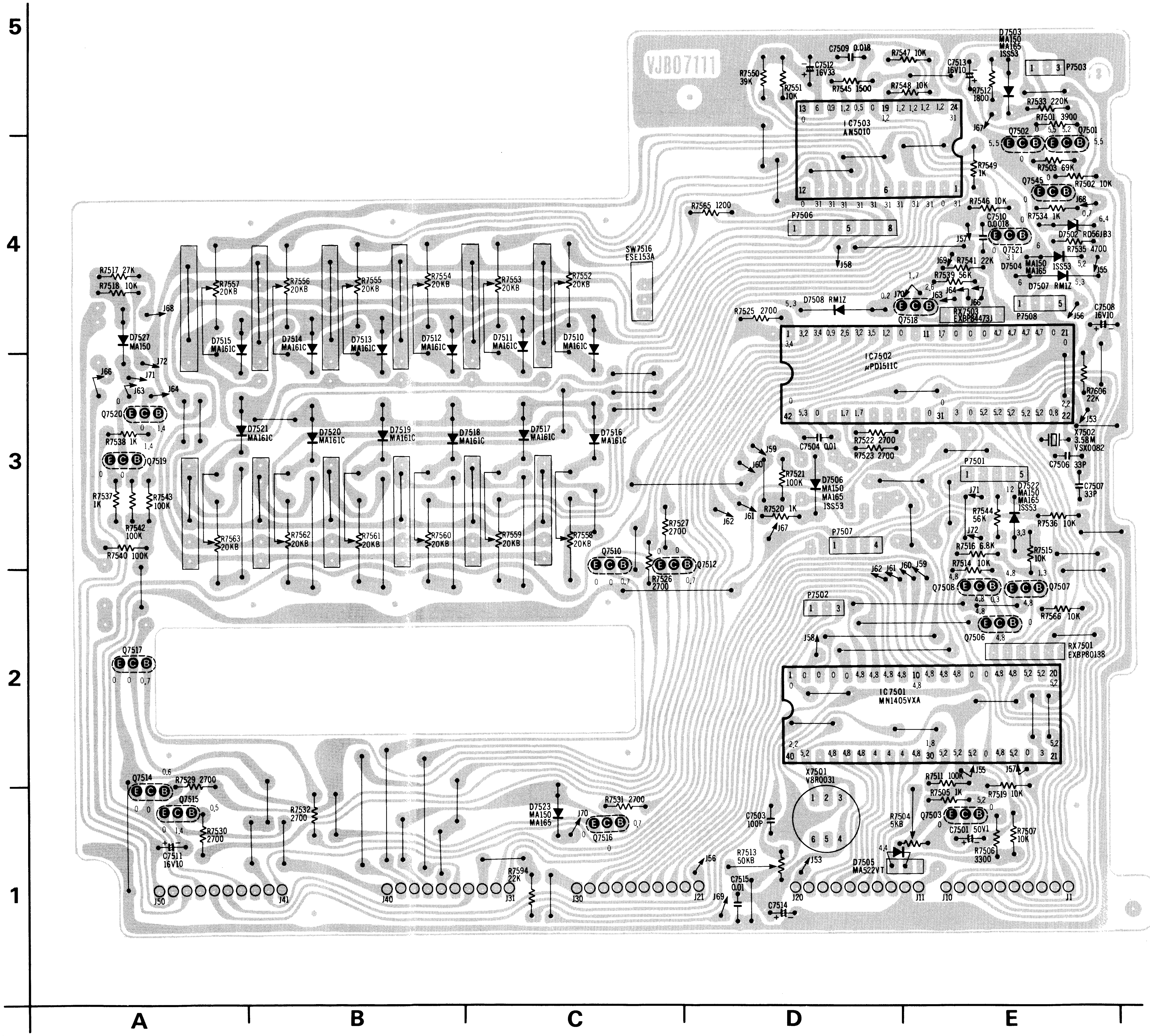
R7564 3300
R7602 100K
R7524 5KB
GND
P7504
D
E



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4
3
2
1
A
B
C
D
E
VJB07111
IC7503 AN5010
IC7502 μPD1511C
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X7501 V8R0031
X7502 3.58M VSX0082
RX7503 EXBP84473J
RX7501 EXBP80138
SW7516 ESE153A
P7501
P7502
P7503
P7506
P7507
P7508
D7503 MA150 MA165 1SS53
D7502 RD56JB3
D7504 MA150 MA165 1SS53
D7507 RM1Z
D7508 RM1Z
D7506 MA150 MA165 1SS53
D7522 MA150 MA165 1SS53
D7523 MA150 MA165
D7505 MA522VT
D7527 MA150
D7510 MA161C
D7511 MA161C
D7512 MA161C
D7513 MA161C
D7514 MA161C
D7515 MA161C
D7516 MA161C
D7517 MA161C
D7518 MA161C
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R7556 20KB
R7557 20KB
R7558 20KB
R7559 20KB
R7560 20KB
R7561 20KB
R7562 20KB
R7563 20KB
R7517 27K
R7518 10K
R7538 1K
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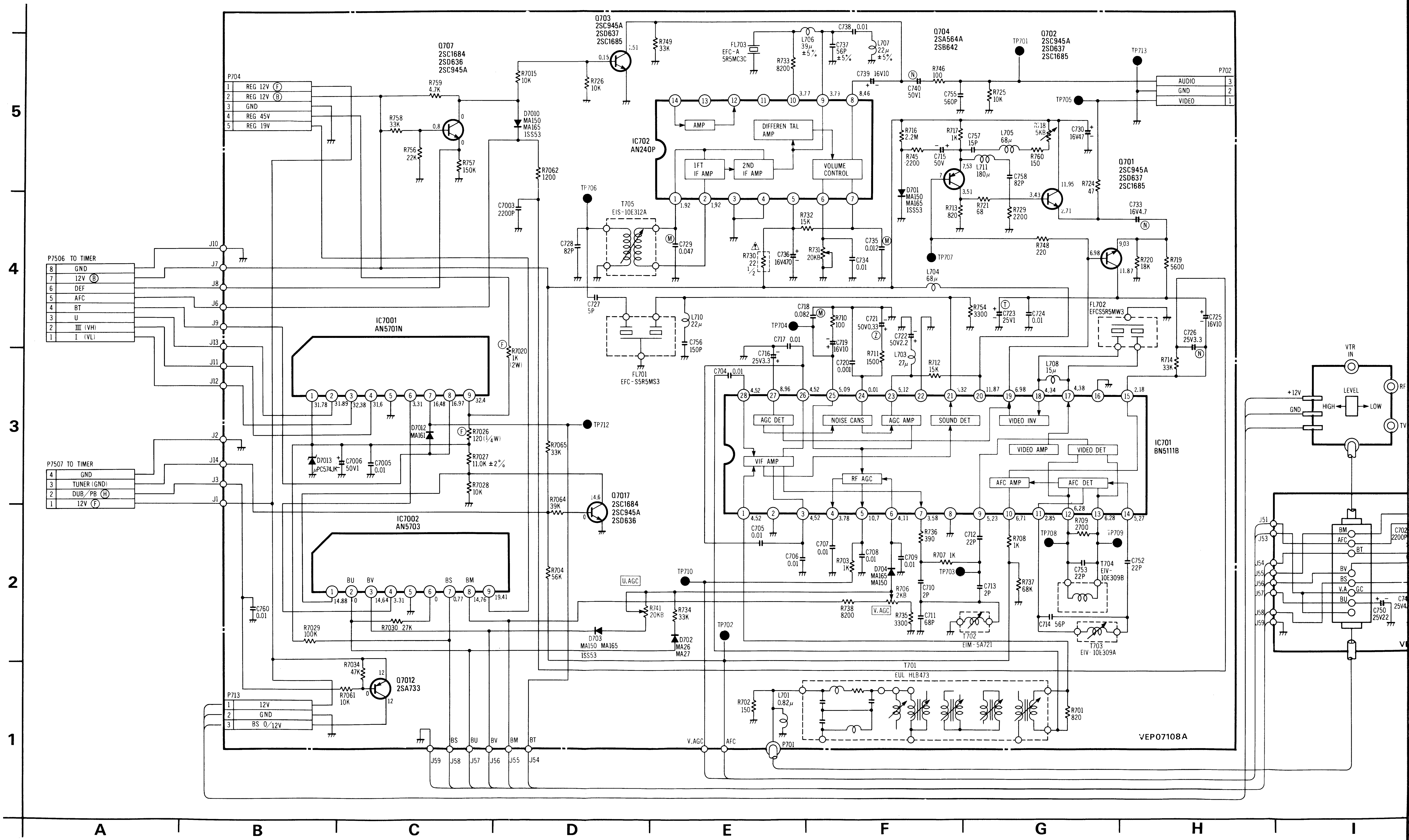
R7527 2700
R7526 2700
R7544 56K
R7536 10K
R7516 6.8K
R7515 10K
R7514 10K
R7566 10K
R7529 2700
R7530 2700
R7532 2700
R7531 2700
R7594 22K
R7513 50KB
R7511 100K
R7505 1K
R7519 10K
R7504 5KB
R7507 10K
R7506 3300
C7509 0.018
C7512 16V33
C7513 16V10
C7510 0.0018
C7508 16V10
C7504 0.01
C7506 33P
C7507 33P
C7511 16V10
C7503 100P
C7515 0.01
C7514
C7501 50V1
Q7501
Q7502
Q7545
Q7521
Q7518
Q7520
Q7519
Q7510
Q7512
Q7508
Q7507
Q7506
Q7517
Q7514
Q7515
Q7516
Q7503
J50
J41
J40
J31
J30
J21
J20
J11
J10
J1

TV DEMODULATOR SCHEMATIC DIAGRAM (VEQ0225) *NV-7200E/EG*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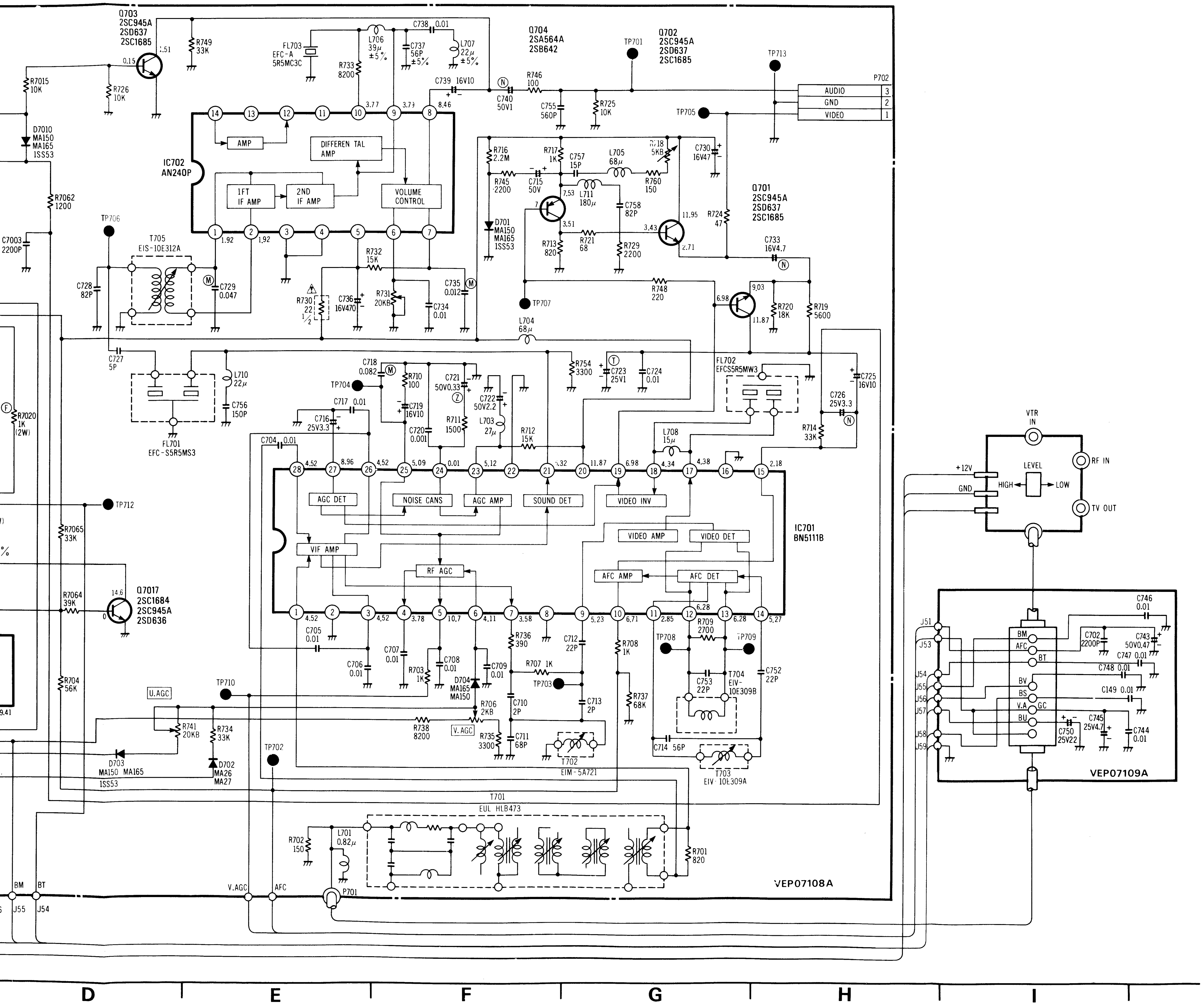
4
3
2
1
A
B
C
D
E
F
G
H
I
P704
REG 12V Ⓕ
REG 12V Ⓑ
GND
REG 45V
REG 19V
P7506 TO TIMER
GND
12V Ⓑ
DEF
AFC
BT
U
Ⅲ (VH)
Ⅰ (VL)
P7507 TO TIMER
GND
TUNER (GND)
DUB/PB Ⓗ
12V Ⓕ
J10
J7
J8
J6
J9
J13
J11
J12
J2
J14
J3
J1
Q707
2SC1684
2SD636
2SC945A
Q703
2SC945A
2SD637
2SC1685
IC7001
AN5701N
IC7002
AN5703
IC702
AN240P
AMP
DIFFERENTIAL AMP
1ST IF AMP
2ND IF AMP
VOLUME CONTROL
T705
EIS-10E312A
FL703
EFC-A 5R5MC3C
FL701
EFC-S5R5MS3
FL702
EFCS5R5MW3
Q704
2SA564A
2SB642
Q702
2SC945A
2SD637
2SC1685
Q701
2SC945A
2SD637
2SC1685
P702
AUDIO
GND
VIDEO
TP701
TP713
TP705
TP706
TP707
TP704
TP712
TP710
TP702
TP703
TP708
TP709
IC701
BN5111B
AGC DET
NOISE CANS
AGC AMP
SOUND DET
VIDEO INV
VIDEO AMP
VIDEO DET
VIF AMP
RF AGC
AFC AMP
AFC DET
Q7017
2SC1684
2SC945A
2SD636
Q7012
2SA733
P713
12V
GND
BS 0/12V
D7010
MA150
MA165
1SS53
D7012
MA161
D7013
μPC574JK
D703
MA150 MA165
1SS53
D702
MA26
MA27
D701
MA150
MA165
1SS53
D704
MA165
MA150
U.AGC
V.AGC
T701
EUL HLB473
T702
EIM-5A721
T703
EIV-10E309A
T704
EIV-10E309B
L701 0.82μ
R701 820
R702 150
P701
J59
J58
J57
J56
J55
J54
BS
BU
BV
BM
BT
AFC
VTR IN
LEVEL
HIGH
LOW
+12V
GND
RF
TV
J51
J53
BM
AFC
BT
BV
BS
V.A
GC
BU
C750 25V22
C702 2200P
VEP07108A

AM (VEQ0225) *NV-7200E/EG*

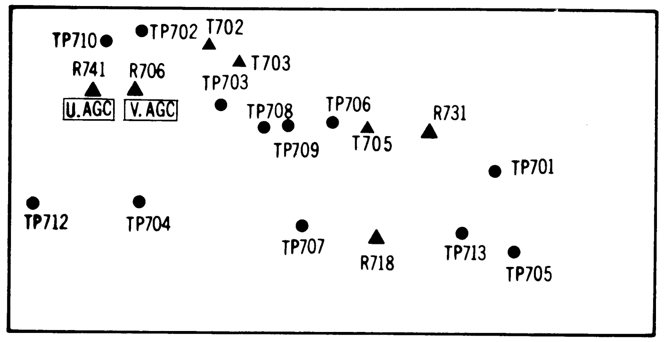

Q703
2SC945A
2SD637
2SC1685
R749 33K
R7015 10K
R726 10K
D7010 MA150 MA165 1SS53
R7062 1200
C7003 2200P
FL703 EFC-A 5R5MC3C
R733 8200
L706 39μ ±5%
C738 0.01
C737 56P ±5%
L707 22μ ±5%
IC702 AN240P
AMP
DIFFEREN TAL AMP
1FT IF AMP
2ND IF AMP
VOLUME CONTROL
TP706
T705 EIS-10E312A
C728 82P
C729 0.047
R730 22 1/2
C736 16V470
R731 20KB
R732 15K
C734 0.01
C735 0.012
C727 5P
FL701 EFC-S5R5MS3
L710 22μ
C756 150P
R7020 1K (2W)
Q704 2SA564A 2SB642
TP701
Q702 2SC945A 2SD637 2SC1685
TP713
C739 16V10
C740 50V1
R746 100
C755 560P
R725 10K
TP705
P702
AUDIO
GND
VIDEO
R716 2.2M
R717 1K
C757 15P
L705 68μ
R718 5KB
C730 16V47
R745 2200
C715 50V
L711 180μ
R760 150
C758 82P
D701 MA150 MA165 1SS53
R713 820
R721 68
R729 2200
R724 47
Q701 2SC945A 2SD637 2SC1685
C733 16V4.7
TP707
R748 220
R720 18K
R719 5600
L704 68μ
TP704
C718 0.082
R710 100
C721 50V0.33
C722 50V2.2
L703 27μ
R711 1500
C719 16V10
C720 0.001
C717 0.01
C716 25V3.3
C704 0.01
R712 15K
R754 3300
C723 25V1
C724 0.01
FL702 EFCS5R5MW3
C725 16V10
C726 25V3.3
R714 33K
L708 15μ
AGC DET
NOISE CANS
AGC AMP
SOUND DET
VIDEO INV
VIDEO AMP
VIDEO DET
VIF AMP
RF AGC
AFC AMP
AFC DET
IC701 BN5111B
TP712
R7065 33K
R7064 39K
Q7017 2SC1684 2SC945A 2SD636
C705 0.01
C706 0.01
C707 0.01
R703 1K
C708 0.01
C709 0.01
D704 MA165 MA150
R736 390
C712 22P
R707 1K
TP703
R706 2KB
C710 2P
C713 2P
R735 3300
C711 68P
T702 EIM-5A721
R708 1K
R737 68K
TP708
R709 2700
TP709
C753 22P
T704 EIV-10E309B
C752 22P
C714 56P
T703 EIV-10E309A
U.AGC
TP710
R741 20KB
R734 33K
R738 8200
V.AGC
D703 MA150 MA165 1SS53
D702 MA26 MA27
TP702
R704 56K
T701 EUL HLB473
R702 150
L701 0.82μ
R701 820
P701
BM
BT
V.AGC
AFC
J55
J54
VEP07108A
VTR IN
RF IN
TV OUT
LEVEL
HIGH
LOW
+12V
GND
J51
J53
J54
J55
J56
J57
J58
J59
BM
AFC
BT
BV
BS
V.A
GC
BU
C746 0.01
C702 2200P
C743 50V0.47
C747 0.01
C748 0.01
C149 0.01
C750 25V22
C745 25V4.7
C744 0.01
VEP07109A
D
E
F
G
H
I

P702 (TV-Demodulator C.B.A)

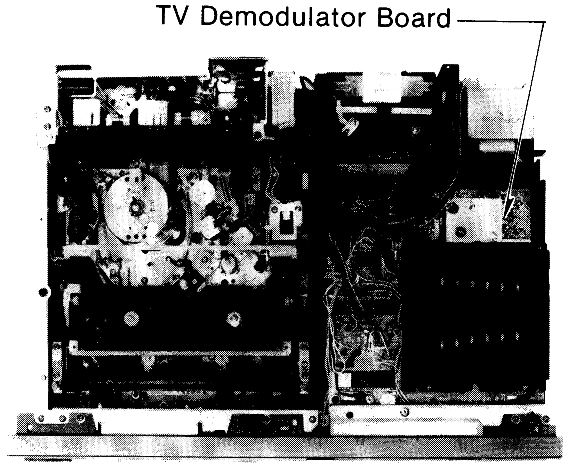
PIN NO.	SIGNAL NAME	DESTINATION
1	Video	P3005-3 Luminance, Chrominance & Audio
2	GND	P3005-4 Luminance, Chrominance & Audio
3	Audio	P3005-1 Luminance, Chrominance & Audio

P704 (TV-Demodulator C.B.A)

PIN NO.	SIGNAL NAME	DESTINATION
1	+ 12V Ant	P1002-3 Power Supply
2	+ 12V	P1002-1 Power Supply
3	GND	P1002-2 Power Supply
4	Reg 45V	P1002-4 Power Supply
5	Reg 19V	P1002-5 Power Supply


TP710
TP702
T702
T703
R741
R706
TP703
U.AGC
V.AGC
TP708
TP706
R731
TP709
T705
TP701
TP712
TP704
TP707
R718
TP713
TP705

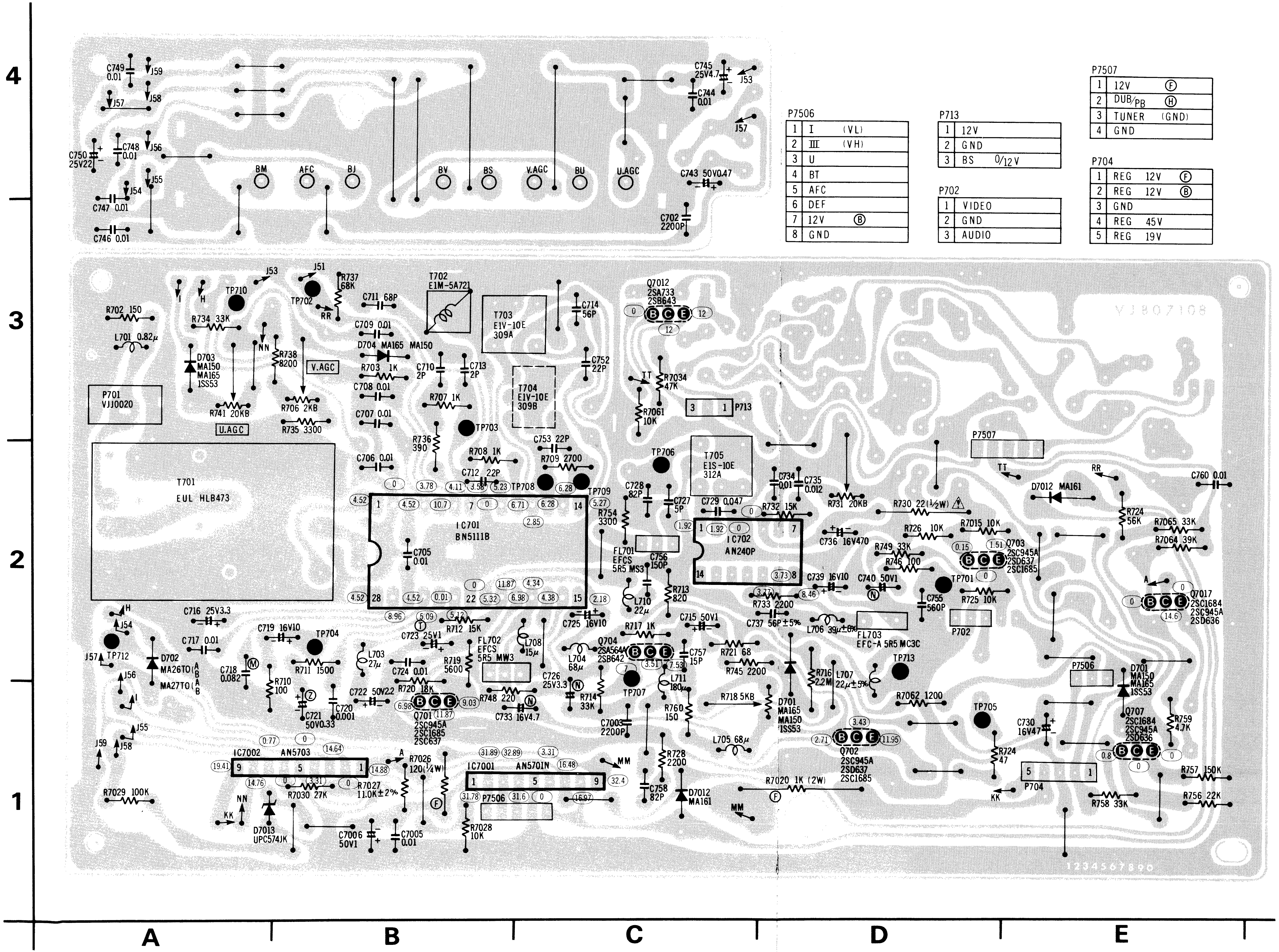
TV Demodulator Board



TV Demodulator C.B.A

Q701	G-4
Q702	G-4
Q703	D-5
Q704	F-5
Q707	C-5
IC701	F-3
IC702	E-5
IC7001	C-3
IC7002	C-2

TV DEMODULATOR & TUNER CONNECTION BOARD (VEP07108A/VEP07109A) *NV-7200E/EG*



4
3
2
1
A
B
C
D
E
C749 0.01
J59
J57
J58
C750 25V22
C748 0.01
J56
J55
J54
C747 0.01
C746 0.01
BM
AFC
BJ
BV
BS
V.AGC
BU
U.AGC
C745 25V4.7
J53
C744 0.01
J57
C743 50V0.47
C702 2200P
J53
J51
TP710
TP702
R737 68K
RR
C711 68P
T702 E1M-5A721
T703 E1V-10E 309A
C714 56P
Q7012 2SA733 2SB643
R702 150
R734 33K
L701 0.82μ
D703 MA150 MA165 1SS53
NN
R738 8200
V.AGC
C709 0.01
D704 MA165 MA150
R703 1K
C710 2P
C713 2P
T704 E1V-10E 309B
C752 22P
TT
R7034 47K
R7061 10K
P713
P701 VJJ0020
R741 20KB
R706 2KB
U.AGC
R735 3300
C708 0.01
C707 0.01
R707 1K
TP703
R736 390
R708 1K
C753 22P
R709 2700
TP706
T705 E1S-10E 312A
P7507
TT
RR
C760 0.01
T701 EUL HLB473
C706 0.01
C712 22P
TP708
TP709
C728 82P
C727 5P
C734 0.01
C735 0.012
R731 20KB
R730 22(1/2W)
D7012 MA161
R724 56K
IC701 BN5111B
C705 0.01
R754 3300
C729 0.047
R732 15K
IC702 AN240P
R726 10K
R7015 10K
R7065 33K
R7064 39K
FL701 EFCS 5R5 MS3
C756 150P
C736 16V470
R749 33K
R746 100
Q703 2SC945A 2SD637 2SC1685
R713 820
C739 16V10
C740 50V1
TP701
C755 560P
R725 10K
Q7017 2SC1684 2SC945A 2SD636
L710 22μ
R733 2200
C737 56P±5%
C716 25V3.3
J54
C719 16V10
TP704
C723 25V1
R712 15K
C725 16V10
R717 1K
C715 50V1
L706 39μ±10%
FL703 EFC-A 5R5 MC3C
P702
C717 0.01
TP712
D702 MA26TO MA27TO
C718 0.082
R711 1500
L703 27μ
C724 0.01
R719 5600
FL702 EFCS 5R5 MW3
L708 15μ
L704 68μ
Q704 2SA564A 2SB642
C757 15P
R721 68
R745 2200
R716 2.2M
L707 22μ±5%
TP713
P7506
D701 MA150 MA165 1SS53
R710 100
C721 50V0.33
C720 0.001
C722 50V2.2
R720 18K
Q701 2SC945A 2SC1685 2SC637
R748 220
C733 16V4.7
C726 25V3.3
R714 33K
TP707
L711 180μ
R718 5KB
D701 MA165 MA150 1SS53
R7062 1200
TP705
R760 150
C7003 2200P
L705 68μ
Q702 2SC945A 2SD637 2SC1685
C730 16V47
R724 47
Q707 2SC1684 2SC945A 2SD636
R759 4.7K
J55
J59
J58
IC7002 AN5703
R7026 120(1/4W)
IC7001 AN5701N
MM
R728 2200
C758 82P
D7012 MA161
R7020 1K (2W)
P704
R757 150K
R7029 100K
NN
R7030 27K
R7027 11.0K±2%
P7506
R7028 10K
KK
D7013 UPC574JK
C7006 50V1
C7005 0.01
MM
KK
R758 33K
R756 22K
VJ807108

P7506

1	I (VL)
2	III (VH)
3	U
4	BT
5	AFC
6	DEF
7	12V Ⓑ
8	GND

P713

1	12V
2	GND
3	BS 0/12V

P702

1	VIDEO
2	GND
3	AUDIO

P7507

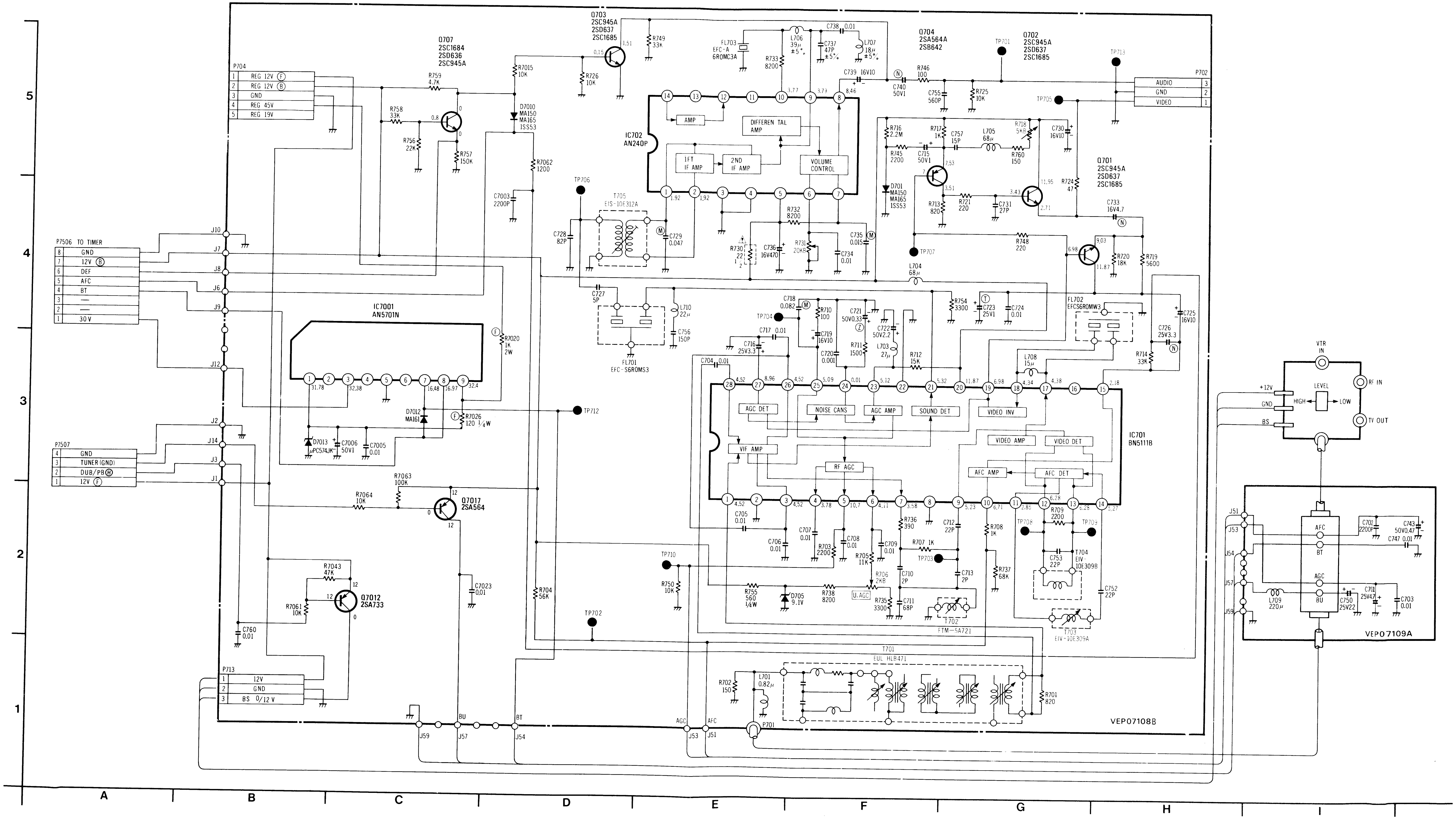
1	12V Ⓕ
2	DUB/PB Ⓗ
3	TUNER (GND)
4	GND

P704

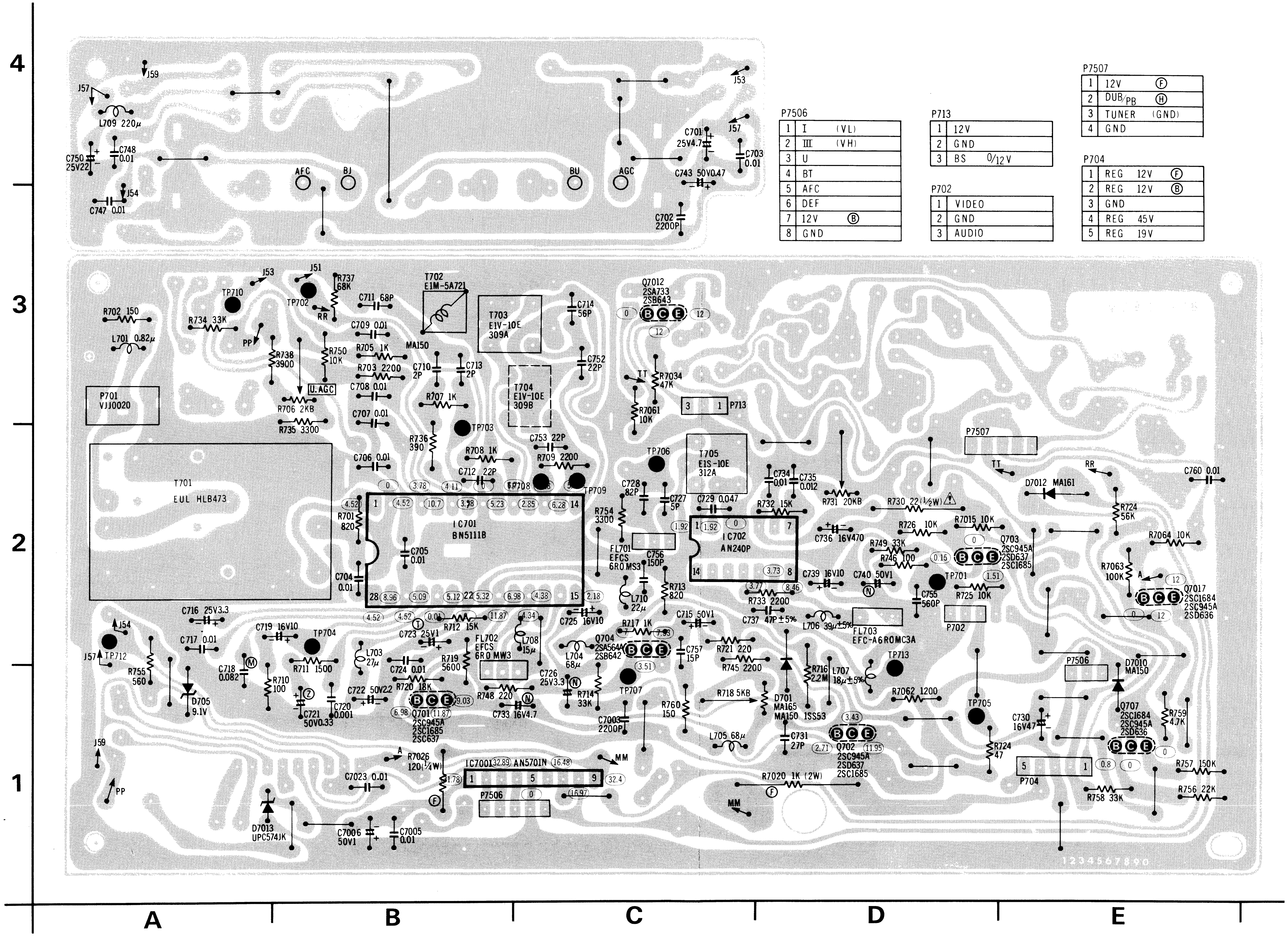
1	REG 12V Ⓕ
2	REG 12V Ⓑ
3	GND
4	REG 45V
5	REG 19V

Demodulator C.B.A.	
Q701	B-1
Q702	D-1
Q703	D-2
Q704	C-2
Q707	E-1
Q7012	C-3
Q7017	E-2
IC701	B-2
IC702	C-2
IC7001	C-1
IC7002	B-1

TV DEMODULATOR SCHEMATIC DIAGRAM (VEQ0226) *NV-7200B*


P704
REG 12V Ⓕ
REG 12V Ⓑ
GND
REG 45V
REG 19V
Q707 2SC1684 2SD636 2SC945A
Q703 2SC945A 2SD637 2SC1685
FL703 EFC-A 6ROMC3A
L706 39μ ±5%
C737 47P ±5%
L707 18μ ±5%
C738 0.01
C739 16V10
Q704 2SA564A 2SB642
TP701
Q702 2SC945A 2SD637 2SC1685
TP713
P702
AUDIO
GND
VIDEO
TP705
IC702 AN240P
AMP
DIFFEREN TAL AMP
1ST IF AMP
2ND IF AMP
VOLUME CONTROL
D7010 MA150 MA165 1SS53
TP706
T705 EIS-10E312A
D701 MA150 MA165 1SS53
Q701 2SC945A 2SD637 2SC1685
TP707
P7506 TO TIMER
GND
12V Ⓑ
DEF
AFC
BT
30V
J10
J7
J8
J6
J9
J12
J2
J14
J3
J1
IC7001 AN5701N
D7012 MA161
D7013 μPC574JK
TP712
FL701 EFC-S6ROMS3
FL702 EFCS6ROMW3
TP704
IC701 BN5111B
AGC DET
NOISE CANS
AGC AMP
SOUND DET
VIDEO INV
VIF AMP
RF AGC
VIDEO AMP
VIDEO DET
AFC AMP
AFC DET
P7507
GND
TUNER (GND)
DUB/PB Ⓗ
12V Ⓕ
Q7017 2SA564
Q7012 2SA733
TP710
TP702
TP703
TP708
TP709
D705 9.1V
U.AGC
T702 FTM-5A721
T703 EIV-10E309A
T704 EIV-10E309B
T701 EUL HLB471
P713
12V
GND
BS 0/12V
J59
J57
J54
J53
J51
P701
AGC
AFC
BU
BT
VEP07108B
VTR IN
RF IN
TV OUT
+12V
GND
BS
LEVEL
HIGH
LOW
AFC
BT
AGC
BU
VEP07109A
A
B
C
D
E
F
G
H
I
1
2
3
4
5

TV DEMODULATOR & TUNER CONNECTION BOARD (VEP07108B/VEP07109B) *NV-7200B*


4
3
2
1
A
B
C
D
E
J59
J57
L709 220μ
C750 25V22
C748 0.01
J54
C747 0.01
AFC
BJ
BU
AGC
J53
J57
C701 25V4.7
C703 0.01
C743 50V0.47
C702 2200P
J53
J51
TP710
TP702
R737 68K
RR
C711 68P
T702 E1M-5A721
T703 E1V-10E 309A
C714 56P
Q7012 2SA733 2SB643
R702 150
R734 33K
L701 0.82μ
PP
R738 3900
R750 10K
C709 0.01
R705 1K
MA150
R703 2200
C710 2P
C713 2P
C752 22P
C708 0.01
U.AGC
T704 E1V-10E 309B
TT
R7034 47K
R7061 10K
P713
P701 VJJ0020
R706 2KB
R735 3300
C707 0.01
R707 1K
TP703
R736 390
R708 1K
C753 22P
R709 2200
TP706
T705 E1S-10E 312A
T701 EUL HLB473
C706 0.01
C712 22P
TP708
TP709
C728 82P
C727 5P
C734 0.01
C735 0.012
R731 20KB
P7507
R730 22(1/2W)
TT
RR
D7012 MA161
C760 0.01
R701 820
IC701 BN5111B
C729 0.047
R732 15K
R754 3300
IC702 AN240P
R726 10K
R7015 10K
R724 56K
R7064 10K
C705 0.01
C704 0.01
FL701 EFCS 6R0MS3
C756 150P
C736 16V470
R749 33K
R746 100
Q703 2SC945A 2SD637 2SC1685
R7063 100K
Q7017 2SC1684 2SC945A 2SD636
L710 22μ
R713 820
C739 16V10
C740 50V1
TP701
R725 10K
C755 560P
R733 2200
C716 25V3.3
C725 16V10
C737 47P ±5%
L706 39μ±5%
FL703 EFC-A6R0MC3A
P702
C719 16V10
TP704
C723 25V1
R712 15K
R717 1K
C715 50V1
J54
J57
TP712
C717 0.01
L703 27μ
FL702 EFCS 6R0MW3
L708 15μ
L704 68μ
Q704 2SA564A 2SB642
C757 15P
R721 220
R745 2200
TP713
P7506
D7010 MA150
R755 560
D705 9.1V
C718 0.082
R710 100
R711 1500
C724 0.01
R719 5600
C726 25V3.3
R714 33K
TP707
R716 2.2M
L707 18μ±5%
R7062 1200
C722 50V22
R720 18K
R748 220
C733 16V4.7
R718 5KB
D701 MA165 MA150 1SS53
R760 150
TP705
C730 16V47
Q707 2SC1684 2SC945A 2SD636
R759 4.7K
C721 50V0.33
C720 0.001
Q701 2SC945A 2SC1685 2SC637
C7003 2200P
L705 68μ
C731 27P
Q702 2SC945A 2SD637 2SC1685
R724 47
J59
PP
R7026 120(1/4W)
MM
IC7001 AN5701N
R7020 1K (2W)
P704
R757 150K
R758 33K
R756 22K
C7023 0.01
P7506
MM
D7013 UPC574JK
C7006 50V1
C7005 0.01
1234567890

P7506

1	I (VL)
2	III (VH)
3	U
4	BT
5	AFC
6	DEF
7	12V Ⓑ
8	GND

P713

1	12V
2	GND
3	BS 0/12V

P702

1	VIDEO
2	GND
3	AUDIO

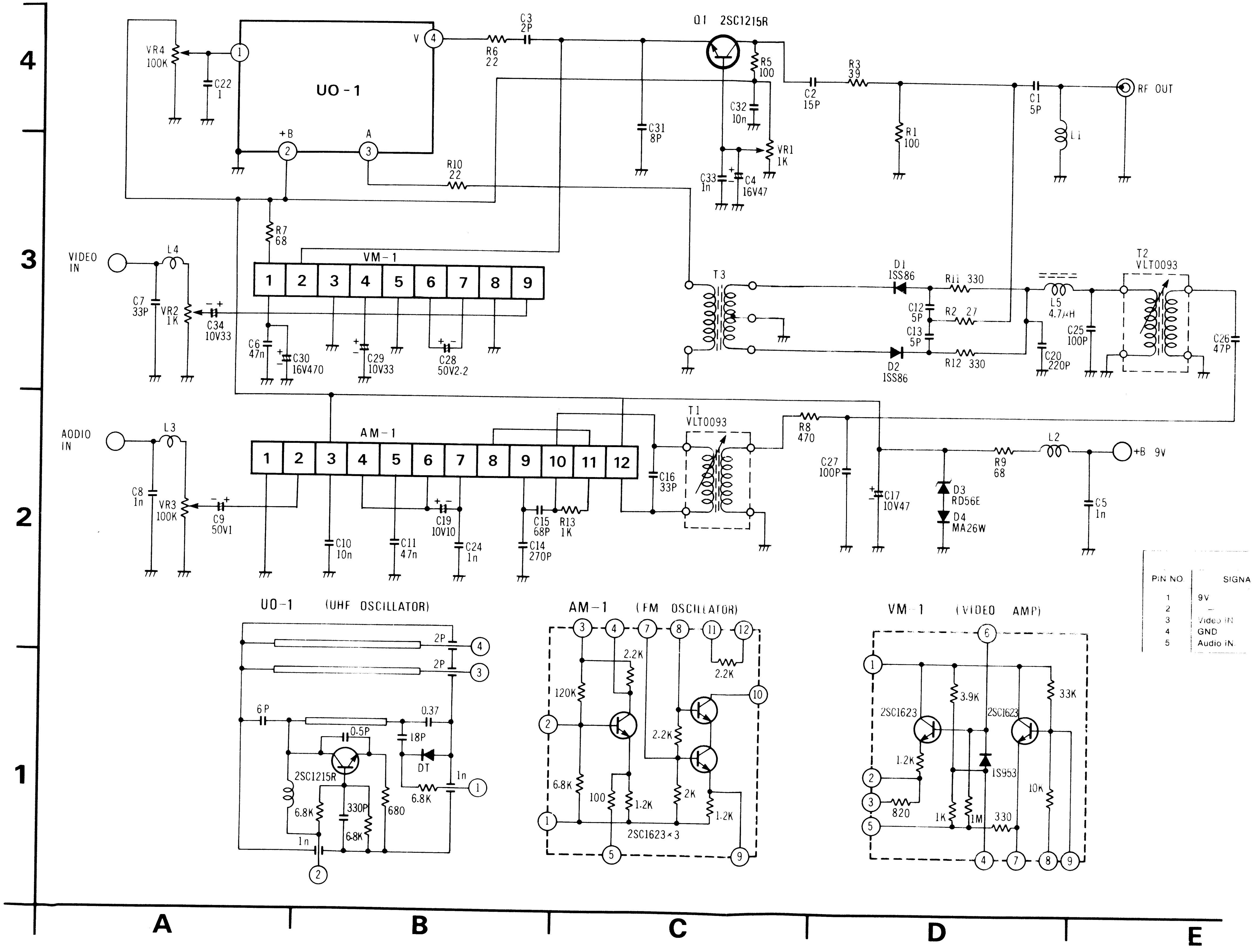
P7507

1	12V Ⓕ
2	DUB/PB Ⓗ
3	TUNER (GND)
4	GND

P704

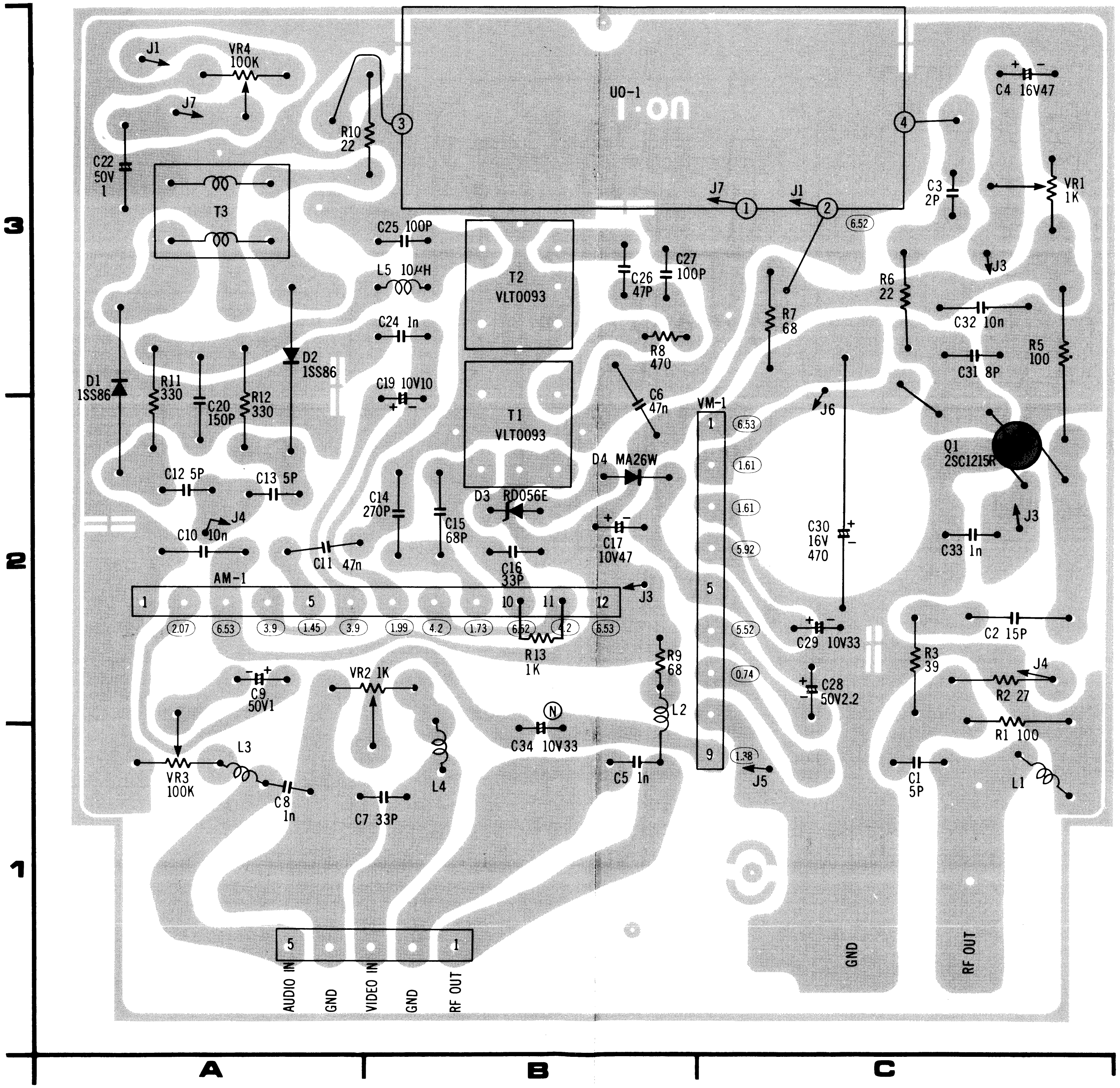
1	REG 12V Ⓕ
2	REG 12V Ⓑ
3	GND
4	REG 45V
5	REG 19V

RF CONVERTER SCHEMATIC DIAGRAM


4
3
2
1
A
B
C
D
E
VR4 100K
C22 1
UO-1
V
+B
A
R6 22
C3 2P
Q1 2SC1215R
R5 100
C32 10n
C31 8P
VR1 1K
C33 1n
C4 16V47
R10 22
C2 15P
R3 39
R1 100
C1 5P
L1
RF OUT
R7 68
VIDEO IN
L4
C7 33P
VR2 1K
C34 10V33
VM-1
C6 47n
C30 16V470
C29 10V33
C28 50V2.2
T3
D1 1SS86
R11 330
C12 5P
R2 27
C13 5P
D2 1SS86
R12 330
L5 4.7μH
C25 100P
C20 220P
T2 VLT0093
C26 47P
AODIO IN
L3
C8 1n
VR3 100K
C9 50V1
AM-1
C10 10n
C11 47n
C19 10V10
C24 1n
C15 68P
R13 1K
C14 270P
C16 33P
T1 VLT0093
R8 470
C27 100P
C17 10V47
D3 RD56E
D4 MA26W
R9 68
L2
+B 9V
C5 1n
UO-1 (UHF OSCILLATOR)
2P
6P
0.37
0.5P
18P
DT
1n
2SC1215R
6.8K
330P
680
AM-1 (FM OSCILLATOR)
2.2K
120K
6.8K
100
1.2K
2K
2SC1623×3
VM-1 (VIDEO AMP)
3.9K
33K
2SC1623
1S953
1.2K
820
1K
1M
330
10K

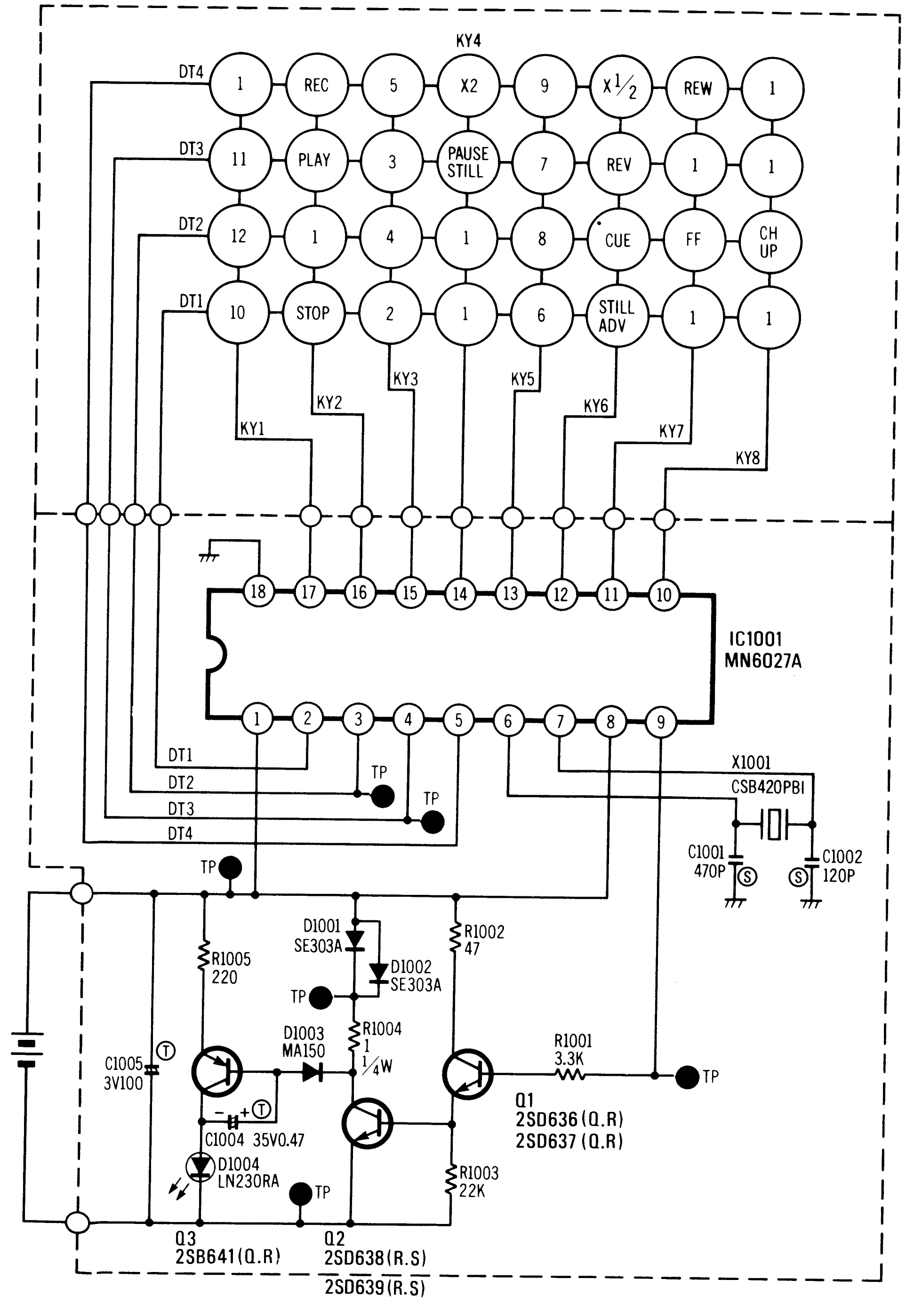
PIN NO.	SIGNAL NAME	DESTINATION	
		P1 (RF Converter C.B.A)	
1	9V	P3003-1	Luminance. Chrominance & Audio
2	—	—	—
3	Video IN	P3003-3	Luminance. Chrominance & Audio
4	GND	P3003-4	Luminance. Chrominance & Audio
5	Audio IN	P3003-5	Luminance, Chrominance & Audio

RF CONVERTER BOARD (*NV-7200E/EG*; ENC17351/*NV-7200B*; ENC17352)

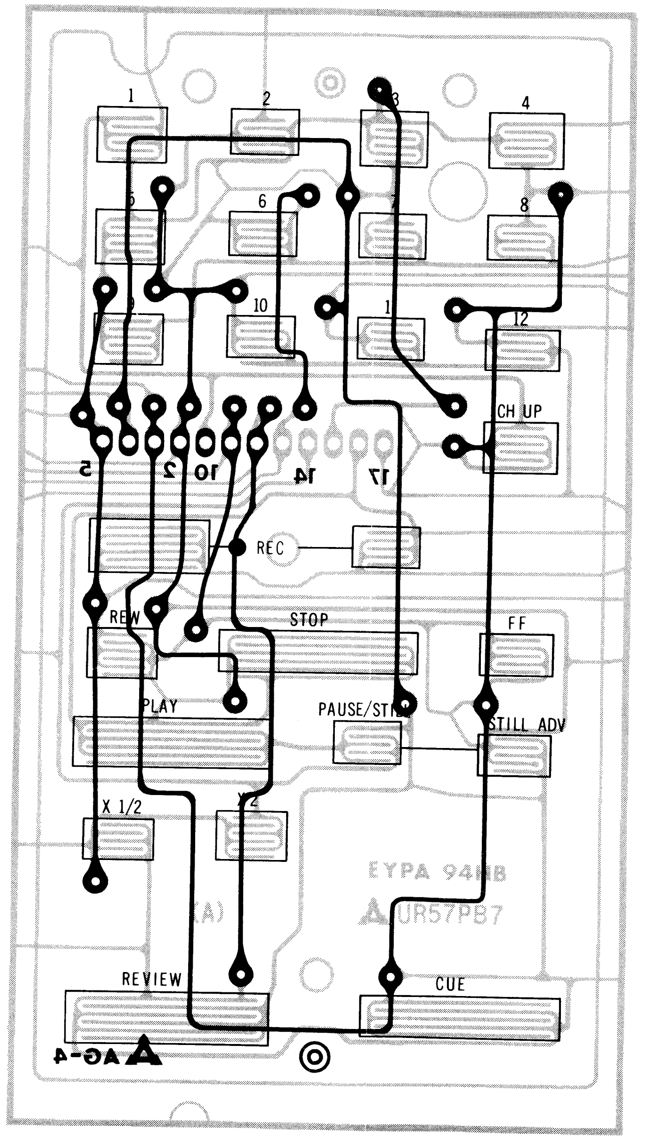


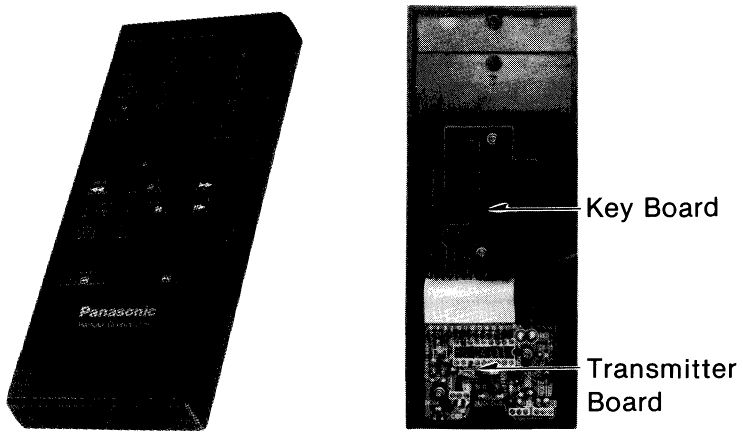
UO-1
J1
VR4 100K
J7
C22 50V 1
R10 22
T3
C25 100P
L5 10μH
C24 1n
C19 10V10
T2 VLT0093
T1 VLT0093
C26 47P
C27 100P
R8 470
R7 68
C6 47n
D1 1SS86
R11 330
C20 150P
R12 330
D2 1SS86
C12 5P
C13 5P
C10 10n
J4
C11 47n
C14 270P
C15 68P
D3 RD056E
C16 33P
D4 MA26W
C17 10V47
AM-1
J3
R13 1K
R9 68
L2
C9 50V1
VR2 1K
VR3 100K
L3
C8 1n
C7 33P
L4
C34 10V33
C5 1n
VM-1
J6
J5
C30 16V 470
C29 10V33
C28 50V2.2
C4 16V47
C3 2P
VR1 1K
R6 22
C32 10n
C31 8P
R5 100
Q1 2SC1215R
C33 1n
C2 15P
R3 39
R2 27
R1 100
C1 5P
L1
6.52
6.53
1.61
1.61
5.92
5.52
0.74
1.38
2.07
6.53
3.9
1.45
3.9
1.99
4.2
1.73
6.52
4.2
6.53
AUDIO IN
GND
VIDEO IN
GND
RF OUT
GND
RF OUT
A
B
C
1
2
3

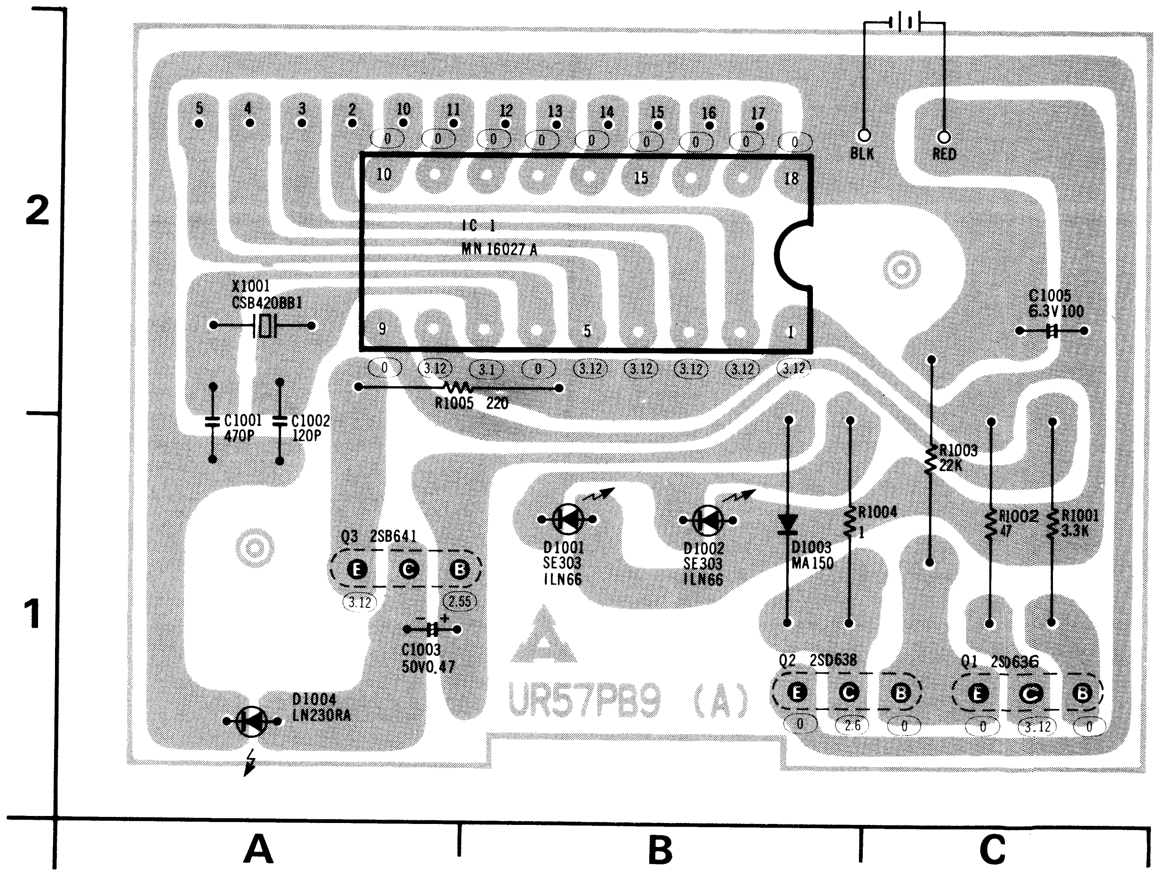
INFRARED REMOTE CONTROL TRANSMITTER SCHEMATIC DIAGRAM


KY4
DT4
REC
X2
X½
REW
DT3
PLAY
PAUSE STILL
REV
DT2
CUE
FF
CH UP
DT1
STOP
STILL ADV
KY1
KY2
KY3
KY5
KY6
KY7
KY8
IC1001
MN6027A
DT1
DT2
DT3
DT4
TP
X1001
CSB420PBI
C1001
470P
C1002
120P
D1001
SE303A
D1002
SE303A
R1002
47
R1005
220
D1003
MA150
R1004
1
¼W
R1001
3.3K
C1005
3V100
C1004 35V0.47
D1004
LN230RA
Q1
2SD636(Q.R)
2SD637(Q.R)
R1003
22K
Q3
2SB641(Q.R)
Q2
2SD638(R.S)
2SD639(R.S)

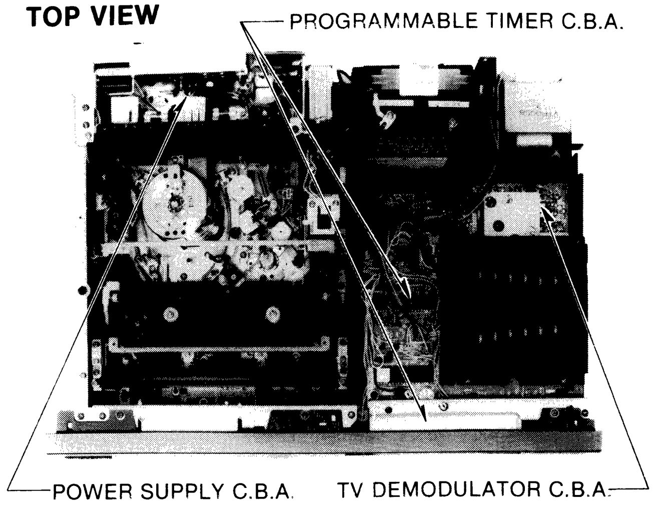
INFRARED REMOTE CONTROL TRANSMITTER BOARD (UR57PB7)


1
2
4
8
6
10
12
CH UP
REC
REW
STOP
FF
PLAY
PAUSE/STILL
STILL ADV
X 1/2
X2
REVIEW
CUE
EYPA 94HB
UR57PB7
AG-4

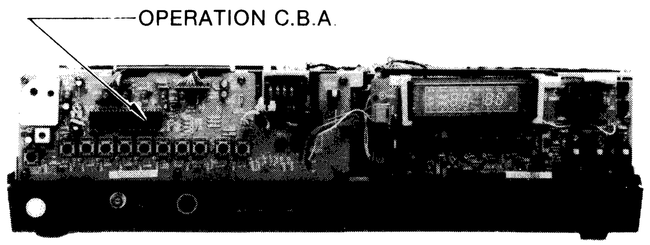

Key Board
Transmitter Board
Panasonic


2
1
A
B
C
BLK
RED
IC 1
MN 16027 A
X1001
CSB420BB1
C1001
470P
C1002
120P
C1005
6.3V100
R1005 220
R1003
22K
R1004
1
R1002
47
R1001
3.3K
Q3 2SB641
C1003
50V0.47
D1001
SE303
ILN66
D1002
SE303
ILN66
D1003
MA150
D1004
LN230RA
Q2 2SD638
Q1 2SD636
UR57PB9 (A)

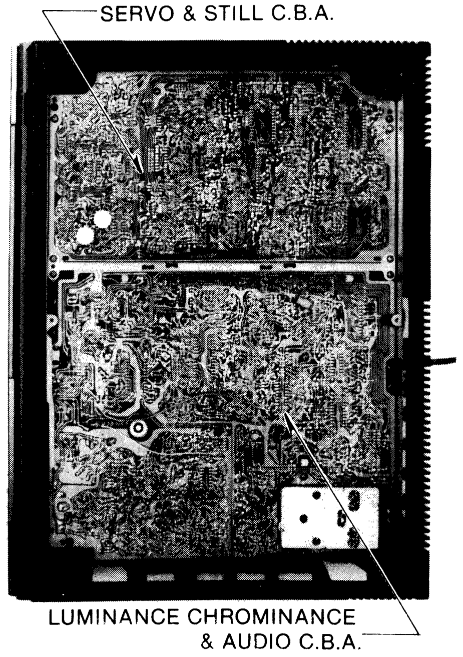
TOP VIEW


PROGRAMMABLE TIMER C.B.A.
POWER SUPPLY C.B.A.
TV DEMODULATOR C.B.A.

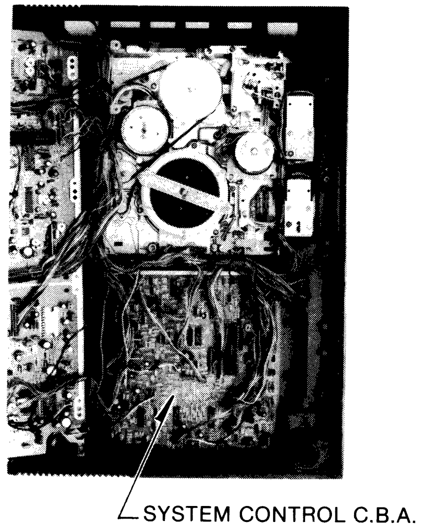
FRONT VIEW


OPERATION C.B.A.

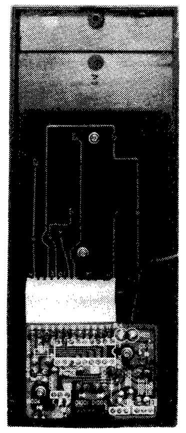
BOTTOM VIEW [I]


SERVO & STILL C.B.A.
LUMINANCE CHROMINANCE & AUDIO C.B.A.

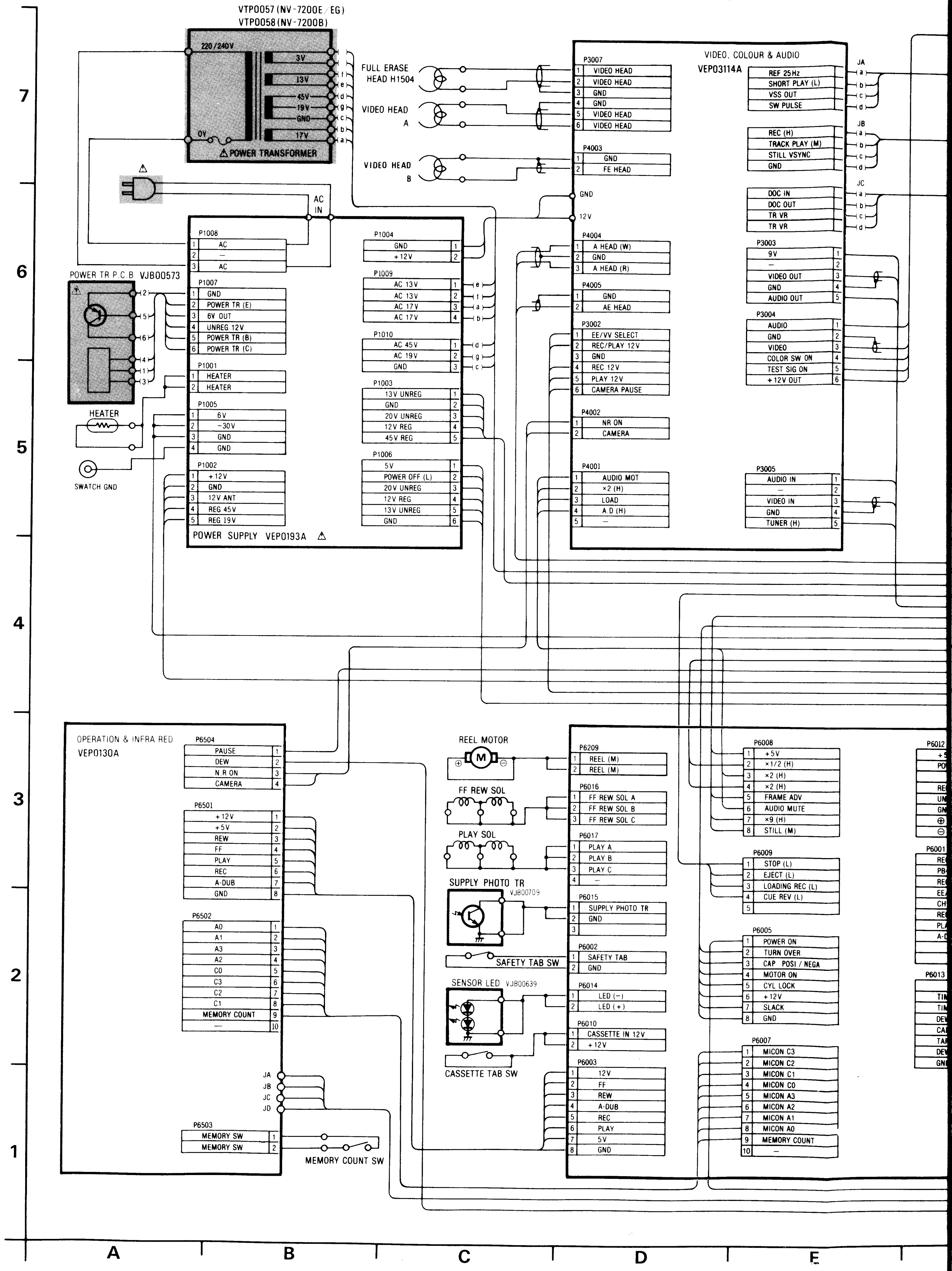
BOTTOM VIEW [II]


SYSTEM CONTROL C.B.A.

INFRA RED REMOTE CONTROL TRANSMITTER



INTERCONNECTION SCHEMATIC DIAGRAM


VTP0057 (NV-7200E/EG)
VTP0058 (NV-7200B)
220/240V
3V
13V
45V
19V
GND
17V
0V
POWER TRANSFORMER
FULL ERASE HEAD H1504
VIDEO HEAD A
VIDEO HEAD B
AC IN
POWER TR P.C.B VJB00573
HEATER
SWATCH GND
P1008
AC
—
AC
P1007
GND
POWER TR (E)
6V OUT
UNREG 12V
POWER TR (B)
POWER TR (C)
P1001
HEATER
HEATER
P1005
6V
−30V
GND
GND
P1002
+12V
GND
12V ANT
REG 45V
REG 19V
P1004
GND
+12V
P1009
AC 13V
AC 13V
AC 17V
AC 17V
P1010
AC 45V
AC 19V
GND
P1003
13V UNREG
GND
20V UNREG
12V REG
45V REG
P1006
5V
POWER OFF (L)
20V UNREG
12V REG
13V UNREG
GND
POWER SUPPLY VEP0193A
VIDEO, COLOUR & AUDIO
VEP03114A
P3007
VIDEO HEAD
VIDEO HEAD
GND
GND
VIDEO HEAD
VIDEO HEAD
P4003
GND
FE HEAD
GND
12V
P4004
A HEAD (W)
GND
A HEAD (R)
P4005
GND
AE HEAD
P3002
EE/VV SELECT
REC/PLAY 12V
GND
REC 12V
PLAY 12V
CAMERA PAUSE
P4002
NR ON
CAMERA
P4001
AUDIO MOT
×2 (H)
LOAD
A.D (H)
—
JA
REF 25Hz
SHORT PLAY (L)
VSS OUT
SW PULSE
JB
REC (H)
TRACK PLAY (M)
STILL VSYNC
GND
JC
DOC IN
DOC OUT
TR VR
TR VR
P3003
9V
—
VIDEO OUT
GND
AUDIO OUT
P3004
AUDIO
GND
VIDEO
COLOR SW ON
TEST SIG ON
+12V OUT
P3005
AUDIO IN
—
VIDEO IN
GND
TUNER (H)
OPERATION & INFRA RED
VEP0130A
P6504
PAUSE
DEW
N.R ON
CAMERA
P6501
+12V
+5V
REW
FF
PLAY
REC
A-DUB
GND
P6502
A0
A1
A3
A2
C0
C3
C2
C1
MEMORY COUNT
—
JA
JB
JC
JD
P6503
MEMORY SW
MEMORY SW
MEMORY COUNT SW
REEL MOTOR
FF REW SOL
PLAY SOL
SUPPLY PHOTO TR
VJB00709
SAFETY TAB SW
SENSOR LED VJB00639
CASSETTE TAB SW
P6209
REEL (M)
REEL (M)
P6016
FF REW SOL A
FF REW SOL B
FF REW SOL C
P6017
PLAY A
PLAY B
PLAY C
—
P6015
SUPPLY PHOTO TR
GND
P6002
SAFETY TAB
GND
P6014
LED (−)
LED (+)
P6010
CASSETTE IN 12V
+12V
P6003
12V
FF
REW
A-DUB
REC
PLAY
5V
GND
P6008
+5V
×1/2 (H)
×2 (H)
×2 (H)
FRAME ADV
AUDIO MUTE
×9 (H)
STILL (M)
P6009
STOP (L)
EJECT (L)
LOADING REC (L)
CUE REV (L)
P6005
POWER ON
TURN OVER
CAP POSI / NEGA
MOTOR ON
CYL LOCK
+12V
SLACK
GND
P6007
MICON C3
MICON C2
MICON C1
MICON C0
MICON A3
MICON A2
MICON A1
MICON A0
MEMORY COUNT
—
P6012
P6001
P6013
7
6
5
4
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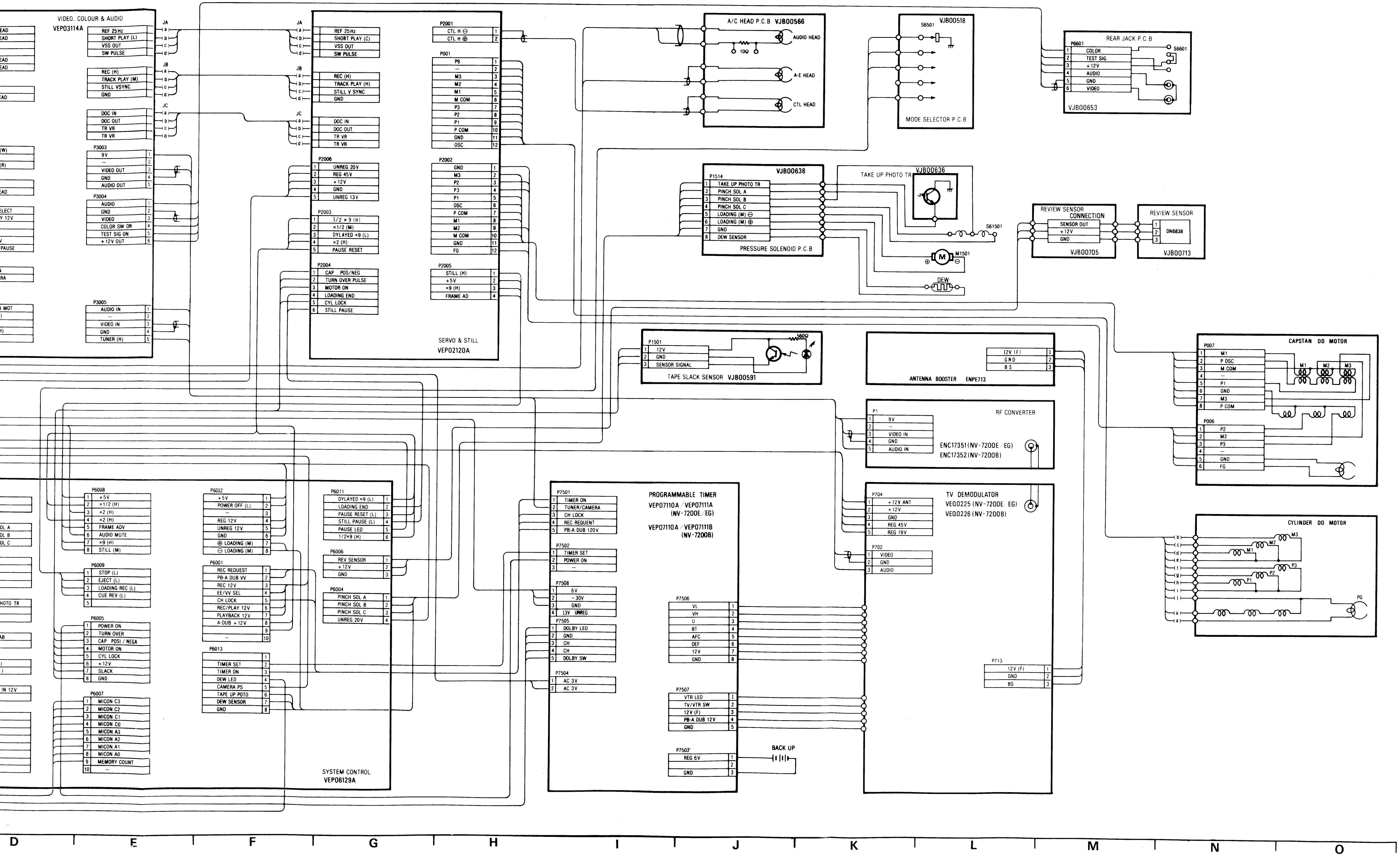
A
B
C
D
E

C DIAGRAM


VIDEO, COLOUR & AUDIO
VEP03114A
REF 25Hz
SHORT PLAY (L)
VSS OUT
SW PULSE
REC (H)
TRACK PLAY (M)
STILL VSYNC
GND
DOC IN
DOC OUT
TR VR
TR VR
P3003
9V
VIDEO OUT
GND
AUDIO OUT
P3004
AUDIO
GND
VIDEO
COLOR SW ON
TEST SIG ON
+12V OUT
P3005
AUDIO IN
VIDEO IN
GND
TUNER (H)
JA
JB
JC
SHORT PLAY (C)
SW PULSE
TRACK PLAY (H)
STILL V SYNC
P2006
UNREG 20V
REG 45V
+12V
GND
UNREG 13V
P2003
1/2 × 9 (H)
×1/2 (M)
DYLAYED ×9 (L)
×2 (H)
PAUSE RESET
P2004
CAP POS/NEG
TURN OVER PULSE
MOTOR ON
LOADING END
CYL LOCK
STILL PAUSE
P2001
CTL H ⊖
CTL H ⊕
P001
P9
M3
M2
M1
M COM
P3
P2
P1
P COM
GND
OSC
P2002
GND
M3
P2
P3
P1
OSC
P COM
M1
M2
M COM
GND
FG
P2005
STILL (H)
+5V
×9 (H)
FRAME AD
SERVO & STILL
VEP02120A
A/C HEAD P.C.B VJB00566
AUDIO HEAD
10Ω
A-E HEAD
CTL HEAD
VJB00518
S6501
MODE SELECTOR P.C.B
REAR JACK P.C.B
P6601
COLOR
TEST SIG
+12V
AUDIO
GND
VIDEO
S6601
VJB00653
VJB00638
P1514
TAKE UP PHOTO TR
PINCH SOL A
PINCH SOL B
PINCH SOL C
LOADING (M) ⊖
LOADING (M) ⊕
GND
DEW SENSOR
PRESSURE SOLENOID P.C.B
TAKE UP PHOTO TR
VJB00636
S61501
M1501
M
DEW
REVIEW SENSOR CONNECTION
SENSOR OUT
+12V
GND
VJB00705
REVIEW SENSOR
DN6838
VJB00713
P1501
12V
GND
SENSOR SIGNAL
560Ω
TAPE SLACK SENSOR VJB00591
12V (F)
GND
BS
ANTENNA BOOSTER ENPE713
P1
9V
VIDEO IN
GND
AUDIO IN
RF CONVERTER
ENC17351 (NV-7200E/EG)
ENC17352 (NV-7200B)
P704
+12V ANT
+12V
GND
REG 45V
REG 19V
TV DEMODULATOR
VEQ0225 (NV-7200E/EG)
VEQ0226 (NV-7200B)
P702
VIDEO
GND
AUDIO
P713
12V (F)
GND
BS
P007
M1
P OSC
M COM
P1
GND
M3
P COM
P006
P2
M2
P3
GND
FG
CAPSTAN DD MOTOR
M1
M2
M3
CYLINDER DD MOTOR
(b)
(c)
(d)
(e)
(f)
(g)
(h)
(i)
(j)
(k)
(a)
M1
M2
M3
P1
P2
P3
PG
P6008
+5V
×1/2 (H)
×2 (H)
×2 (H)
FRAME ADV
AUDIO MUTE
×9 (H)
STILL (M)
P6009
STOP (L)
EJECT (L)
LOADING REC (L)
CUE REV (L)
P6005
POWER ON
TURN OVER
CAP POSI / NEGA
MOTOR ON
CYL LOCK
+12V
SLACK
GND
P6007
MICON C3
MICON C2
MICON C1
MICON C0
MICON A3
MICON A2
MICON A1
MICON A0
MEMORY COUNT
P6012
+5V
POWER OFF (L)
REG 12V
UNREG 12V
GND
⊕ LOADING (M)
⊖ LOADING (M)
P6001
REC REQUEST
PB-A DUB VV
REC 12V
EE/VV SEL
CH LOCK
REC/PLAY 12V
PLAYBACK 12V
A-DUB +12V
P6013
TIMER SET
TIMER ON
DEW LED
CAMERA PS
TAPE UP POTO
DEW SENSOR
GND
P6011
DYLAYED ×9 (L)
LOADING END
PAUSE RESET (L)
STILL PAUSE (L)
PAUSE LED
1/2×9 (H)
P6006
REV SENSOR
+12V
GND
P6004
PINCH SOL A
PINCH SOL B
PINCH SOL C
UNREG 20V
SYSTEM CONTROL
VEP06129A
P7501
TIMER ON
TUNER/CAMERA
CH LOCK
REC REQUENT
PB-A DUB 120V
P7502
TIMER SET
POWER ON
P7508
6V
-30V
GND
13V UNREG
P7505
DOLBY LED
GND
CH
CH
DOLBY SW
P7504
AC 3V
AC 3V
PROGRAMMABLE TIMER
VEP07110A / VEP07111A (NV-7200E/EG)
VEP07110A / VEP07111B (NV-7200B)
P7506
VL
VH
U
BT
AFC
DEF
12V
GND
P7507
VTR LED
TV/VTR SW
12V (F)
PB-A DUB 12V
GND
P7503
REG 6V
GND
BACK UP
D
E
F
G
H
I
J
K
L
M
N
O

ORDER NO: VRD-8107-886

Service Manual

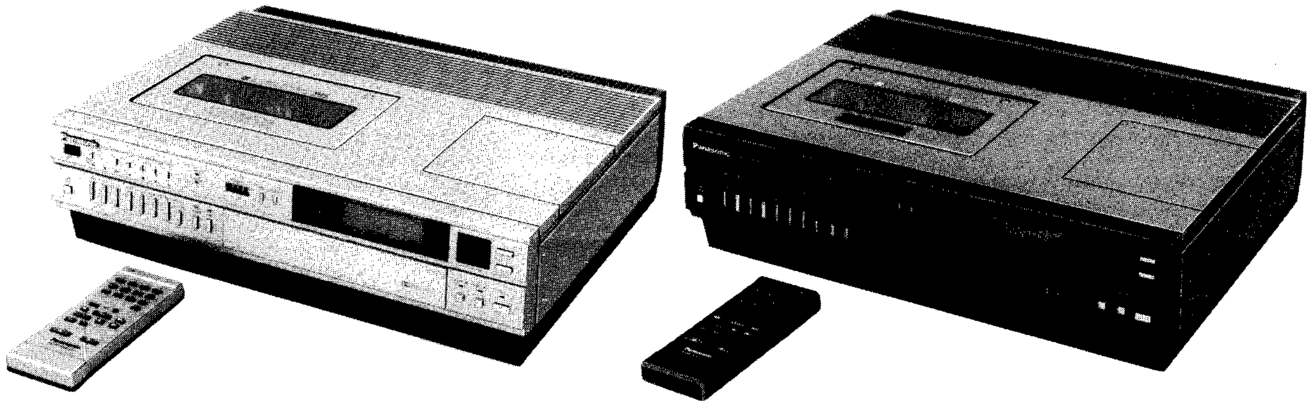
Video Cassette Recorder

Vol. 4

Panasonic VHS

NV-7200 -E -EG -B

Exploded View
Replacement Parts List



SPECIFICATIONS

Power Source:	NV-7200-E, -EG, 220V, AC, 50/60Hz NV-7200-B, 240V, AC, 50/60Hz
Power Consumption:	Approx. 52 watts
Television System:	CCIR: 625 lines, 50 fields PAL colour signal
Video Recording System:	2 rotary heads, helical scanning system Luminance: FM azimuth recording Colour signal: converted subcarrier phase shift recording
Audio Track:	1 track
Tape Format:	Tape width 12.7mm high density tape
Tape Speed:	23.39mm/s
Record/Playback Time:	180 min. with NV-E180 240 min. with NV-E240
FF/REW Time:	Less than 4.5 min. with NV-E180
Heads	Video: 2 rotary heads Audio/Control: 1 stationary head Erase: 1 full track erase 1 Audio track erase
Input Level:	Video: VIDEO IN connector (BNC) 1.0Vp-p, 75Ω unbalanced Audio: MIC IN jack −70dB, 3.9kΩ (Input impedance) unbalanced (M6) LINE IN jack −20dB, 50kΩ unbalanced (RCA)
Output Level:	Video: VIDEO OUT connector (BNC) 1.0Vp-p, 75Ω unbalanced Audio: LINE OUT jack −6dB, 600Ω (Output impedance) unbalanced (RCA) RF Modulated: UHF channel 36 (±4) 75Ω unbalanced
Weight:	11.5kg
Dimensions:	480(W)×136(H)×356(D)mm
Accessories Supplied:	1 pc. Video cassette tape, NV-E120 1 pc. DIN-DIN coaxial cable, VJA0130 1 pc. Dust cover, VFB0008 1 pc. Infrared remote control unit, VSQ0185 (silver) VSQ0186 (black)
Optional Accessories:	Video cassette tape: NV-E240 Approx. 344m, 240 min. NV-E180 Approx. 258m, 180 min. NV-E120 Approx. 174m, 120 min. NV-E60 Approx. 88m, 60 min. Video camera, WV-3030E Microphone

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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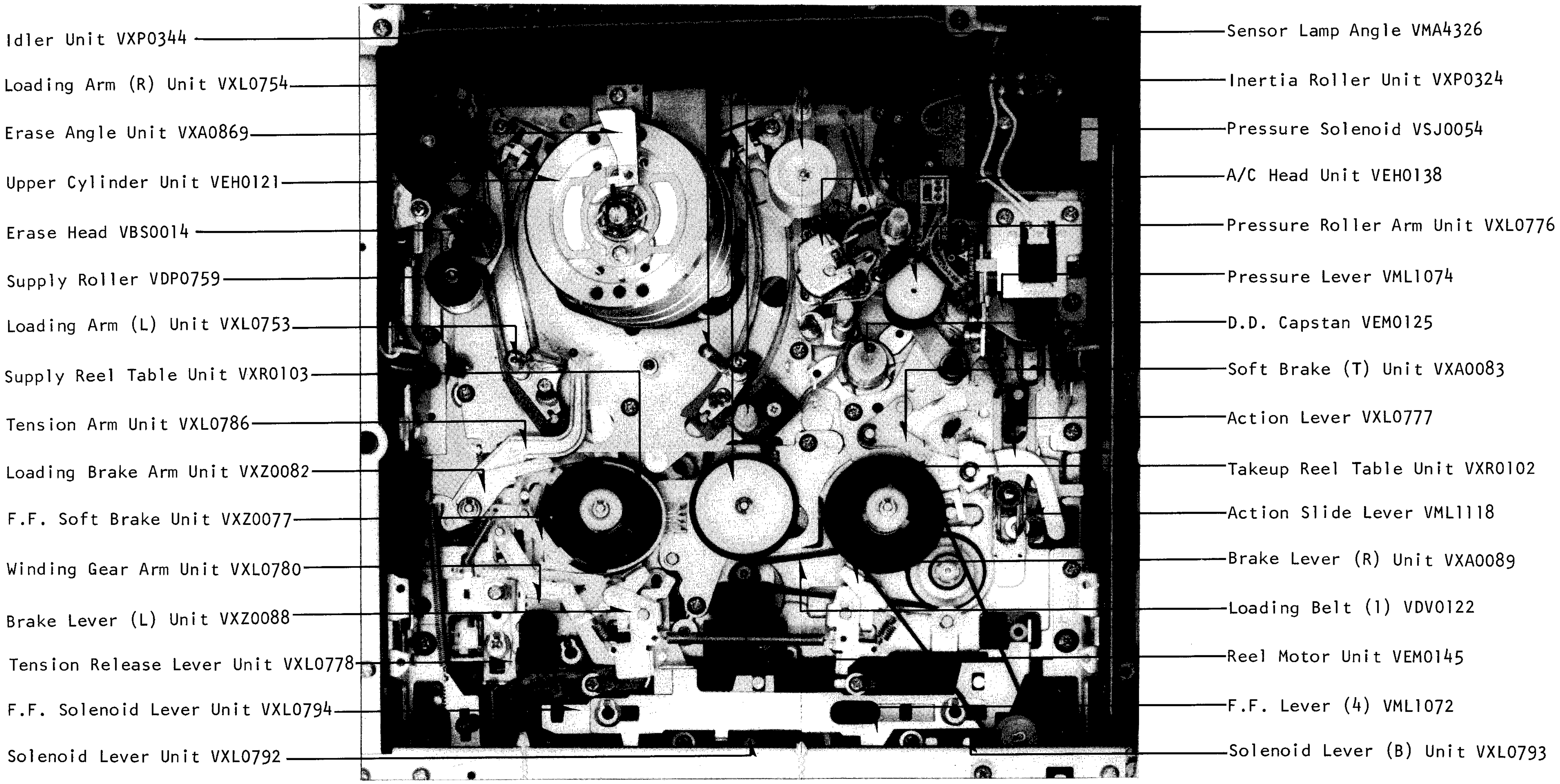
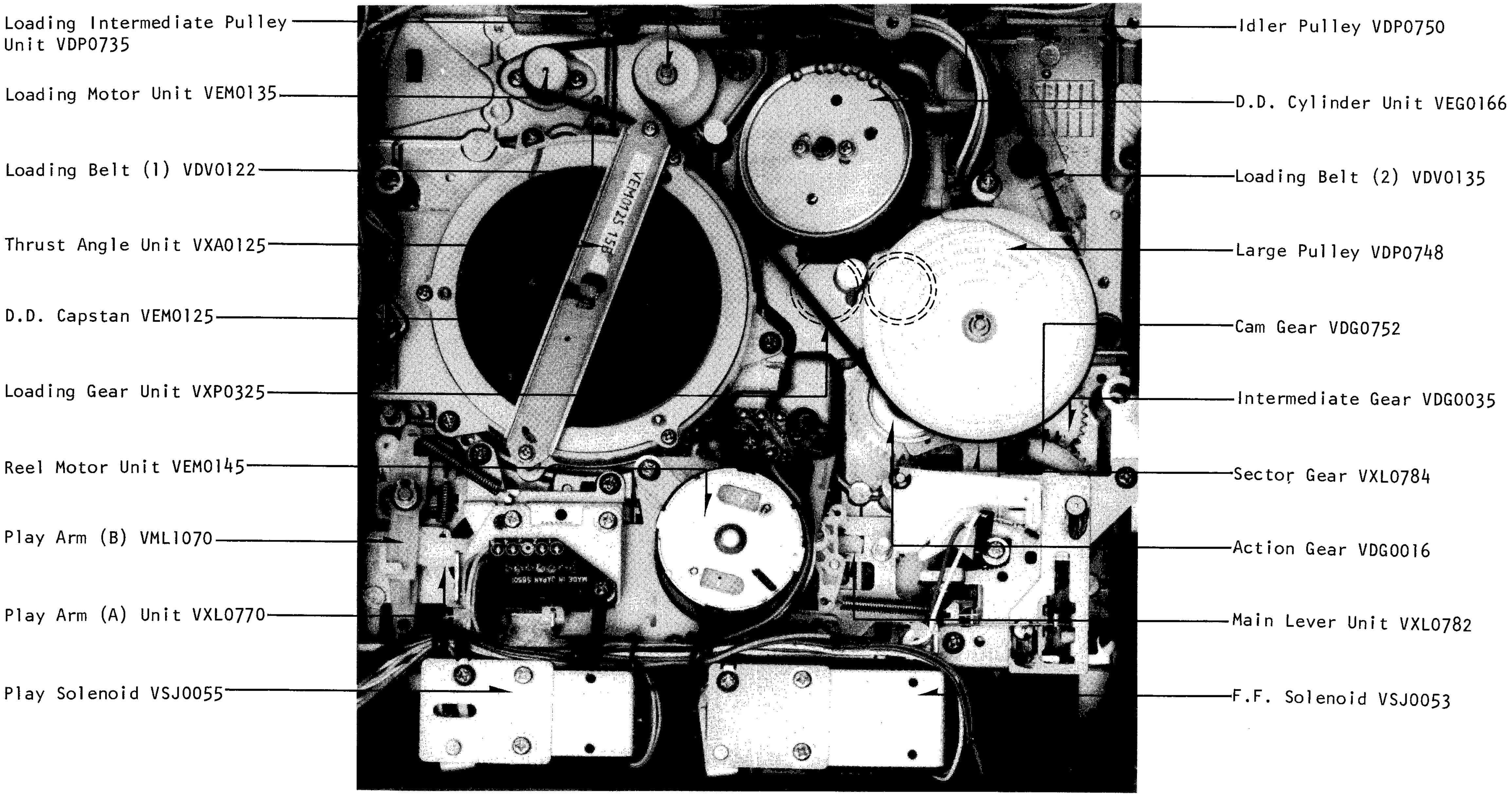
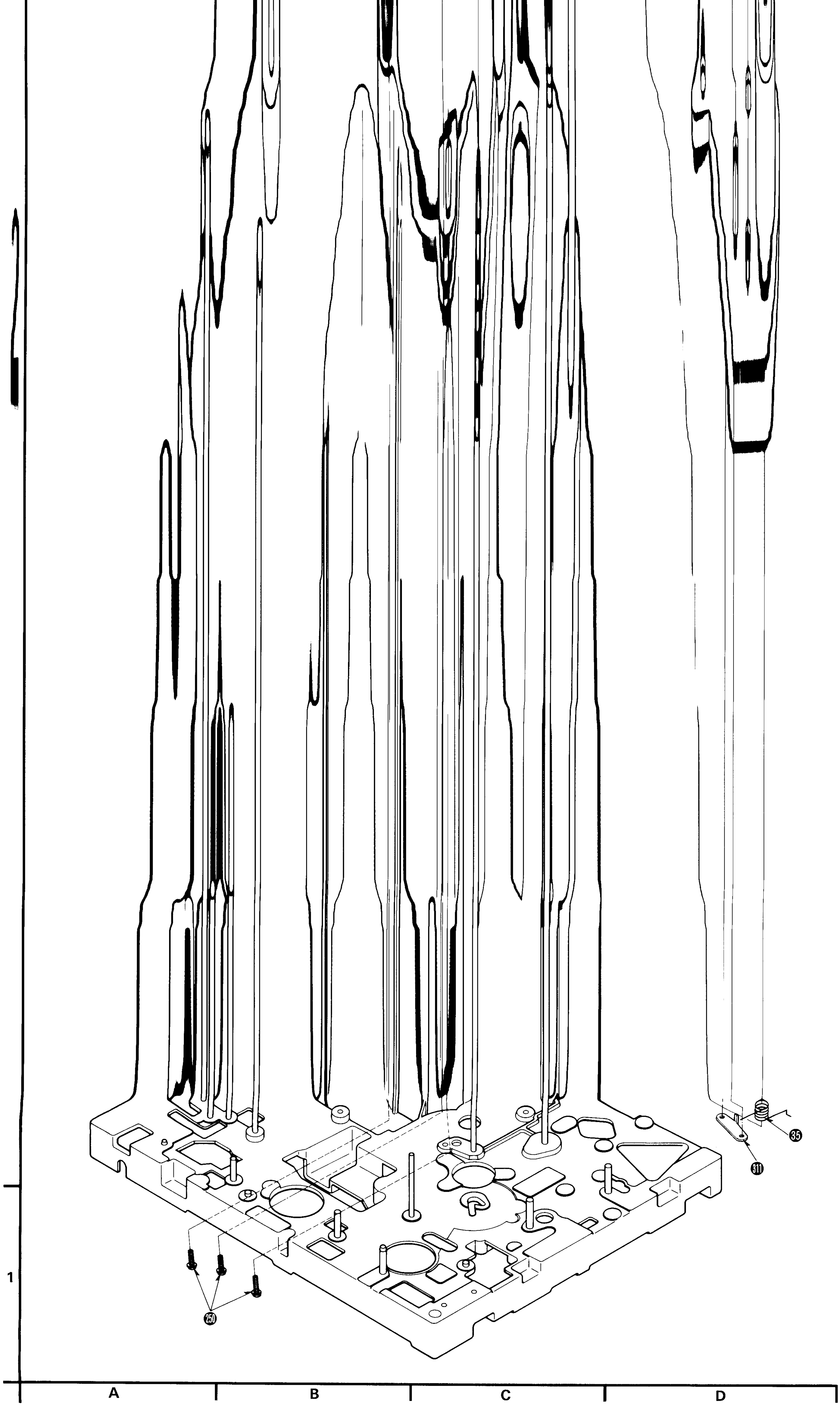
Electrical Replacement Parts List 4-14

INNER PARTS LOCATION
TOP VIEW

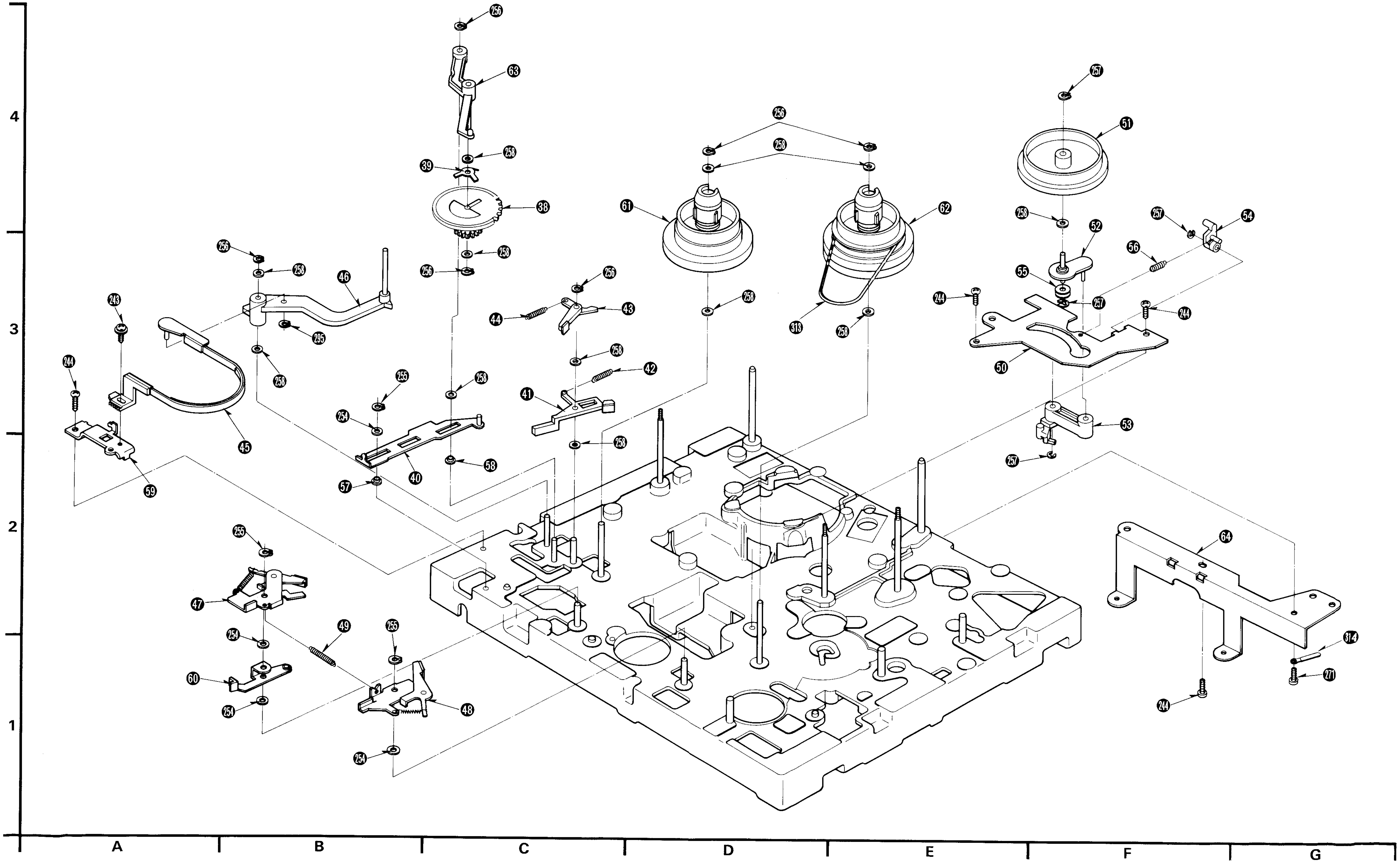

Idler Unit VXP0344
Loading Arm (R) Unit VXL0754
Erase Angle Unit VXA0869
Upper Cylinder Unit VEH0121
Erase Head VBS0014
Supply Roller VDP0759
Loading Arm (L) Unit VXL0753
Supply Reel Table Unit VXR0103
Tension Arm Unit VXL0786
Loading Brake Arm Unit VXZ0082
F.F. Soft Brake Unit VXZ0077
Winding Gear Arm Unit VXL0780
Brake Lever (L) Unit VXZ0088
Tension Release Lever Unit VXL0778
F.F. Solenoid Lever Unit VXL0794
Solenoid Lever Unit VXL0792
Sensor Lamp Angle VMA4326
Inertia Roller Unit VXP0324
Pressure Solenoid VSJ0054
A/C Head Unit VEH0138
Pressure Roller Arm Unit VXL0776
Pressure Lever VML1074
D.D. Capstan VEM0125
Soft Brake (T) Unit VXA0083
Action Lever VXL0777
Takeup Reel Table Unit VXR0102
Action Slide Lever VML1118
Brake Lever (R) Unit VXA0089
Loading Belt (1) VDV0122
Reel Motor Unit VEM0145
F.F. Lever (4) VML1072
Solenoid Lever (B) Unit VXL0793

BOTTOM VIEW


Loading Intermediate Pulley Unit VDP0735
Loading Motor Unit VEM0135
Loading Belt (1) VDV0122
Thrust Angle Unit VXA0125
D.D. Capstan VEM0125
Loading Gear Unit VXP0325
Reel Motor Unit VEM0145
Play Arm (B) VML1070
Play Arm (A) Unit VXL0770
Play Solenoid VSJ0055
Idler Pulley VDP0750
D.D. Cylinder Unit VEG0166
Loading Belt (2) VDV0135
Large Pulley VDP0748
Cam Gear VDG0752
Intermediate Gear VDG0035
Sector Gear VXL0784
Action Gear VDG0016
Main Lever Unit VXL0782
F.F. Solenoid VSJ0053


35
311
250
1
A
B
C
D

❷ *Moving Mechanism Section-(1)*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53
257
64
314
271
244
255
47
49
255
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60
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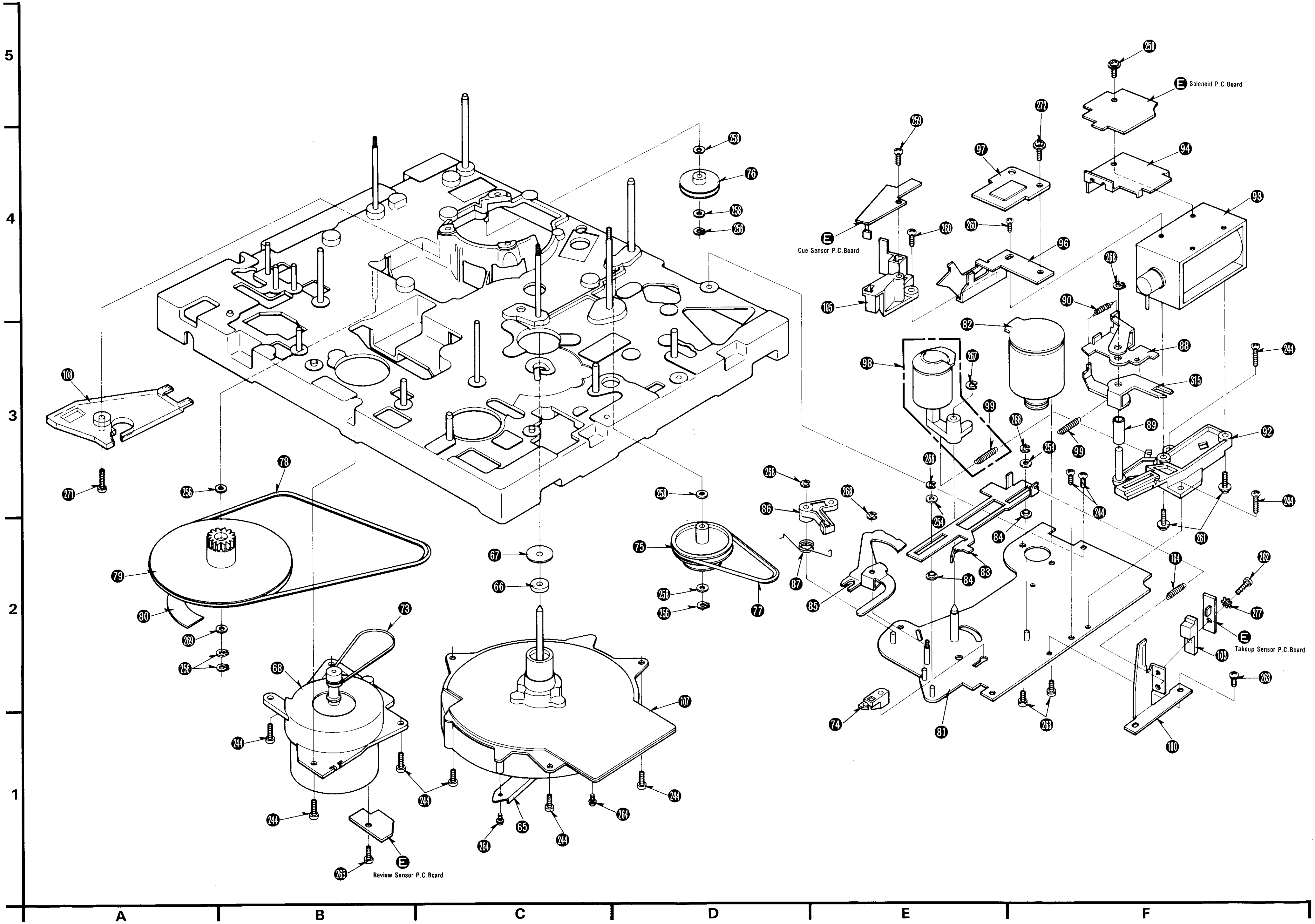
❸ *Chassis Parts Section*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4
3
2
1
A
B
C
D
E
F
250
E Solenoid P.C.Board
272
94
259
97
258
76
258
256
E
Cue Sensor P.C.Board
260
260
96
93
105
268
90
82
88
98
267
315
99
244
108
268
254
99
89
92
271
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244
261
244
84
75
67
104
262
79
66
87
84
83
277
80
256
256
77
85
E
103
Takeup Sensor P.C.Board
263
73
269
256
68
107
74
81
263
100
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264
264
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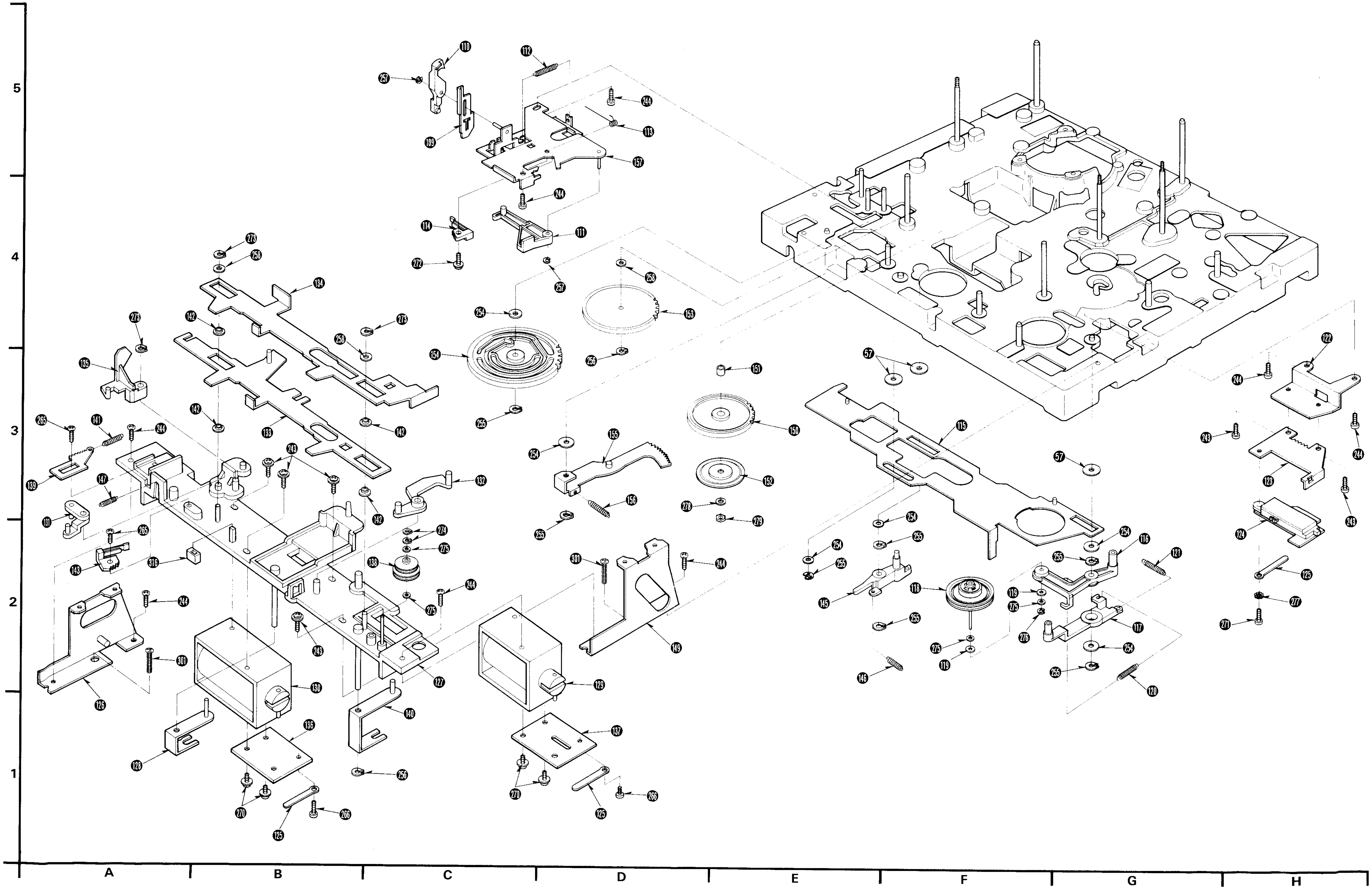
265
E
Review Sensor P.C.Board

❹ Moving Mechanism Section-(2)


5
4
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H
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114
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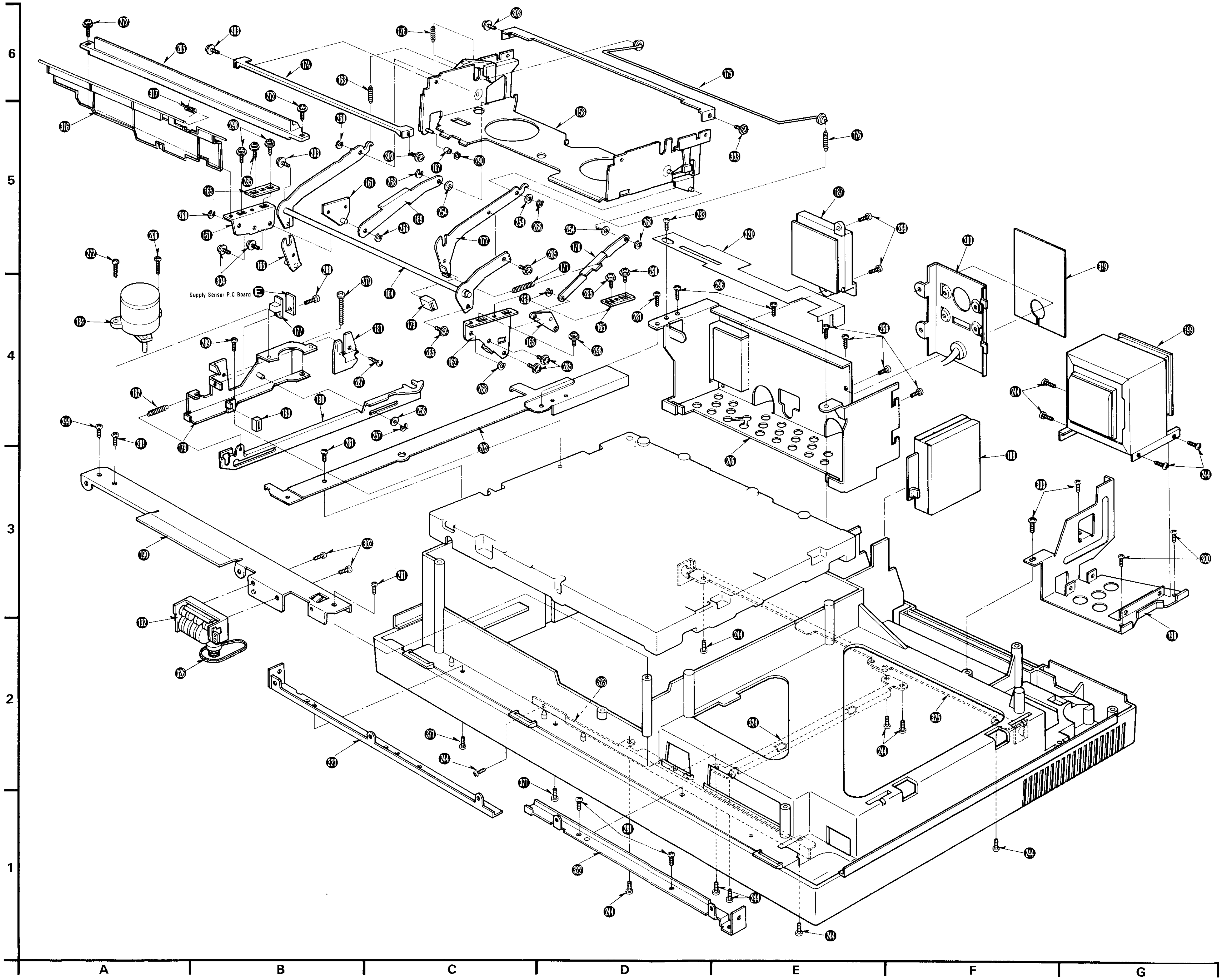
266
125

❺ *Chassis Frame Section*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254
268
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299
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208
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170
171
298
200
319
164
288
370
Supply Sensor P.C Board E
173
268
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244
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A
B
C
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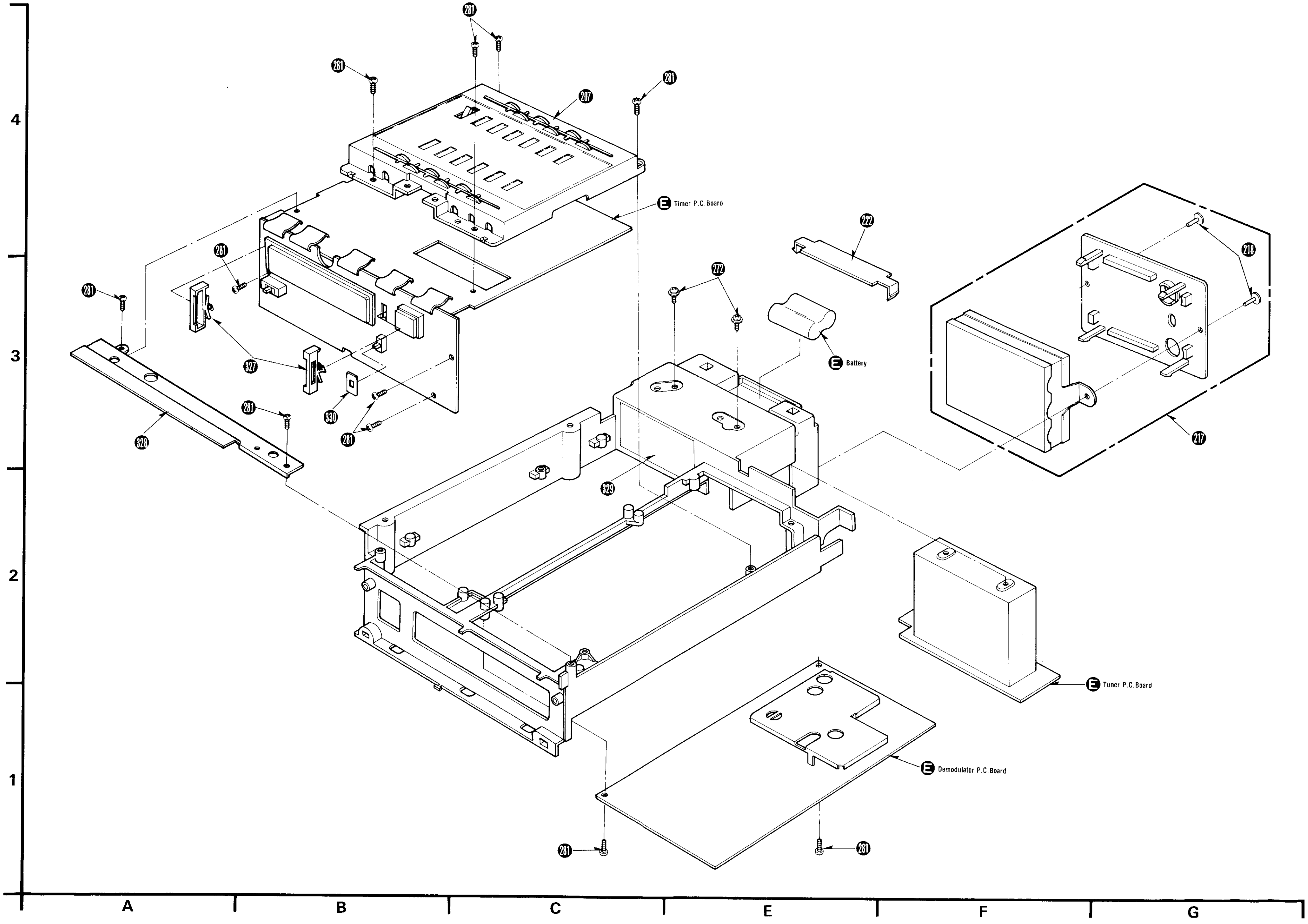
G

⑥ *Timer & Tuner Parts Section*



281
207
E Timer P.C.Board
222
218
272
E Battery
327
330
328
329
217
E Tuner P.C.Board
E Demodulator P.C.Board
4
3
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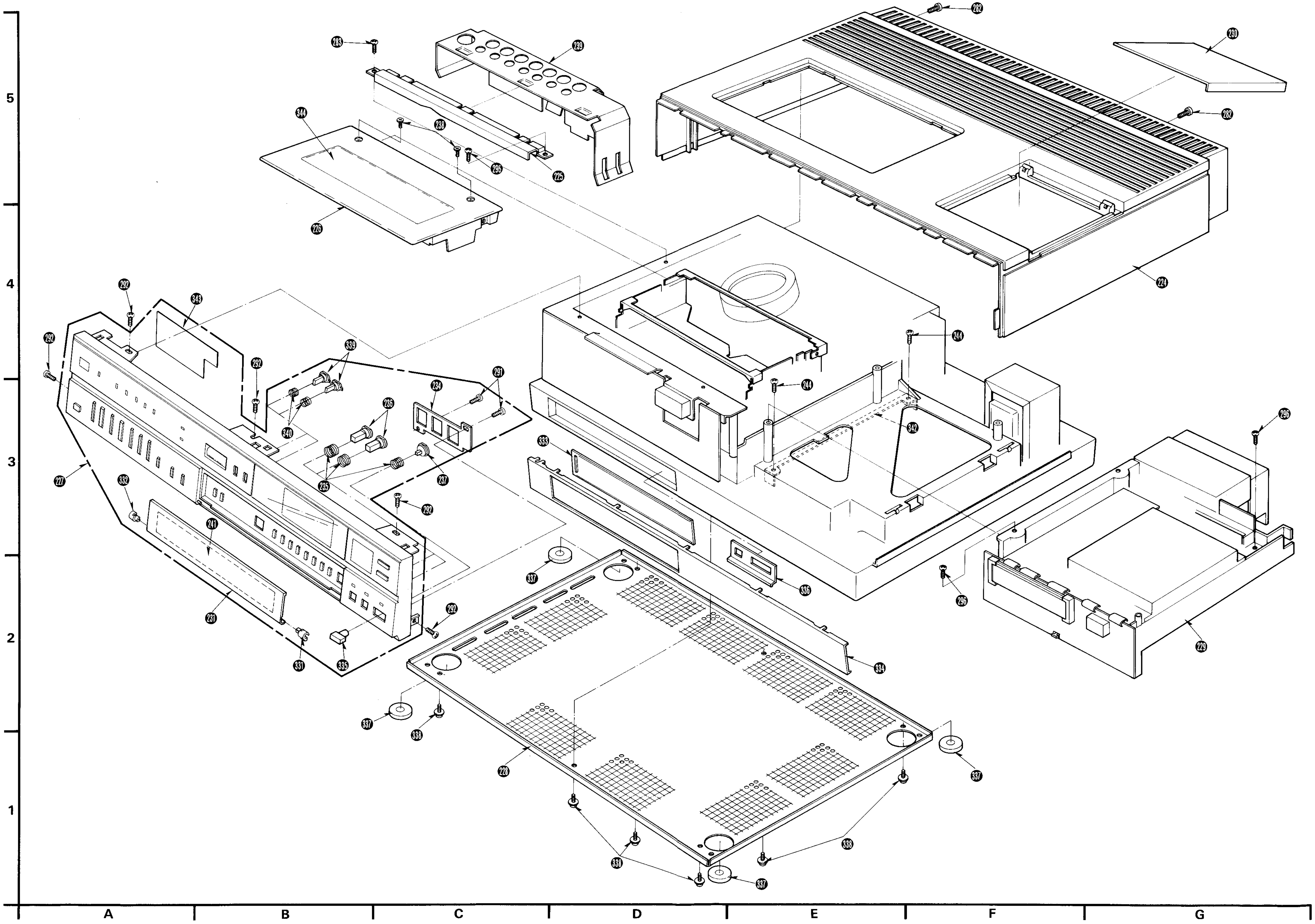
❼ *Casing Parts Section*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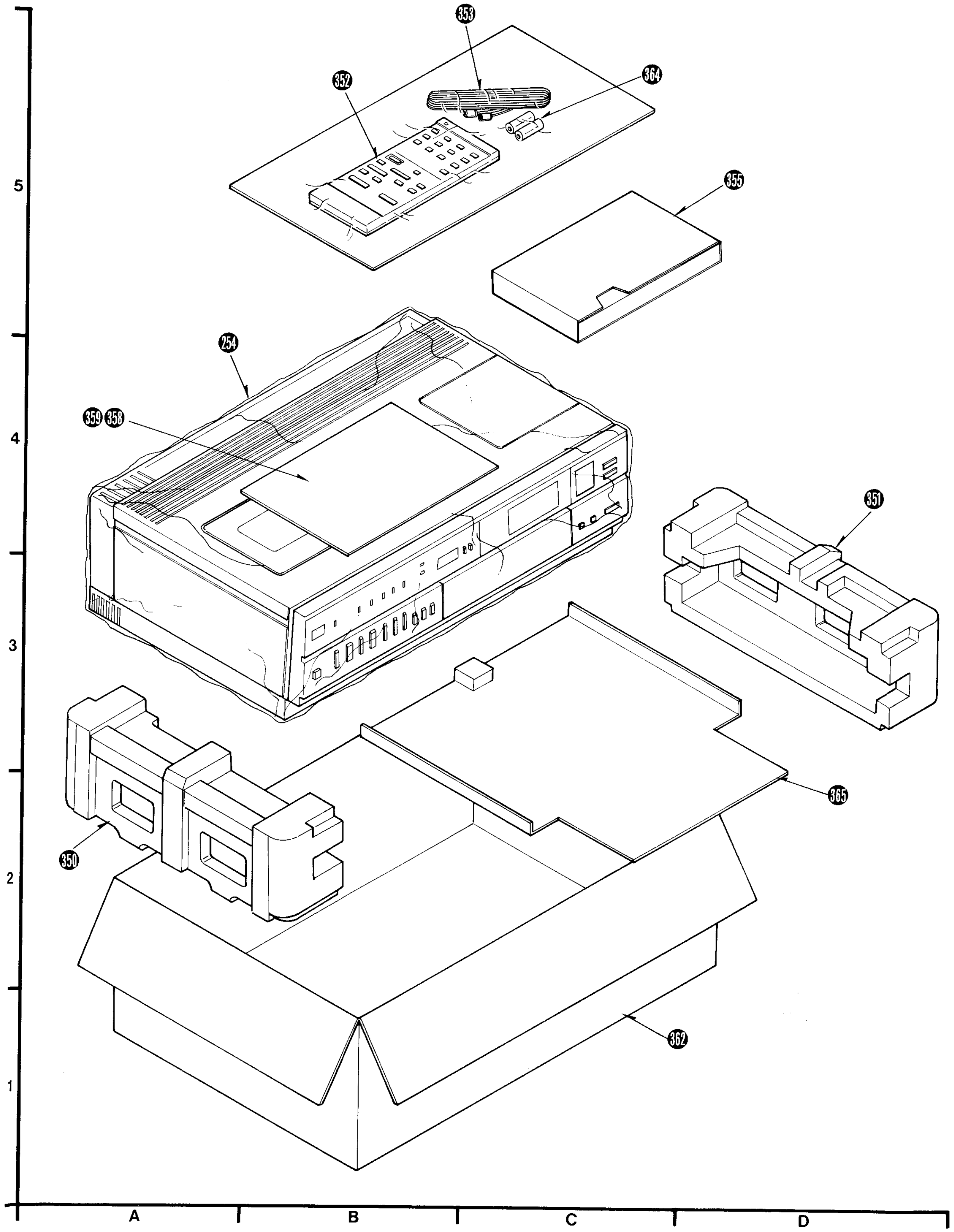
G

❽ *Packing Parts Section*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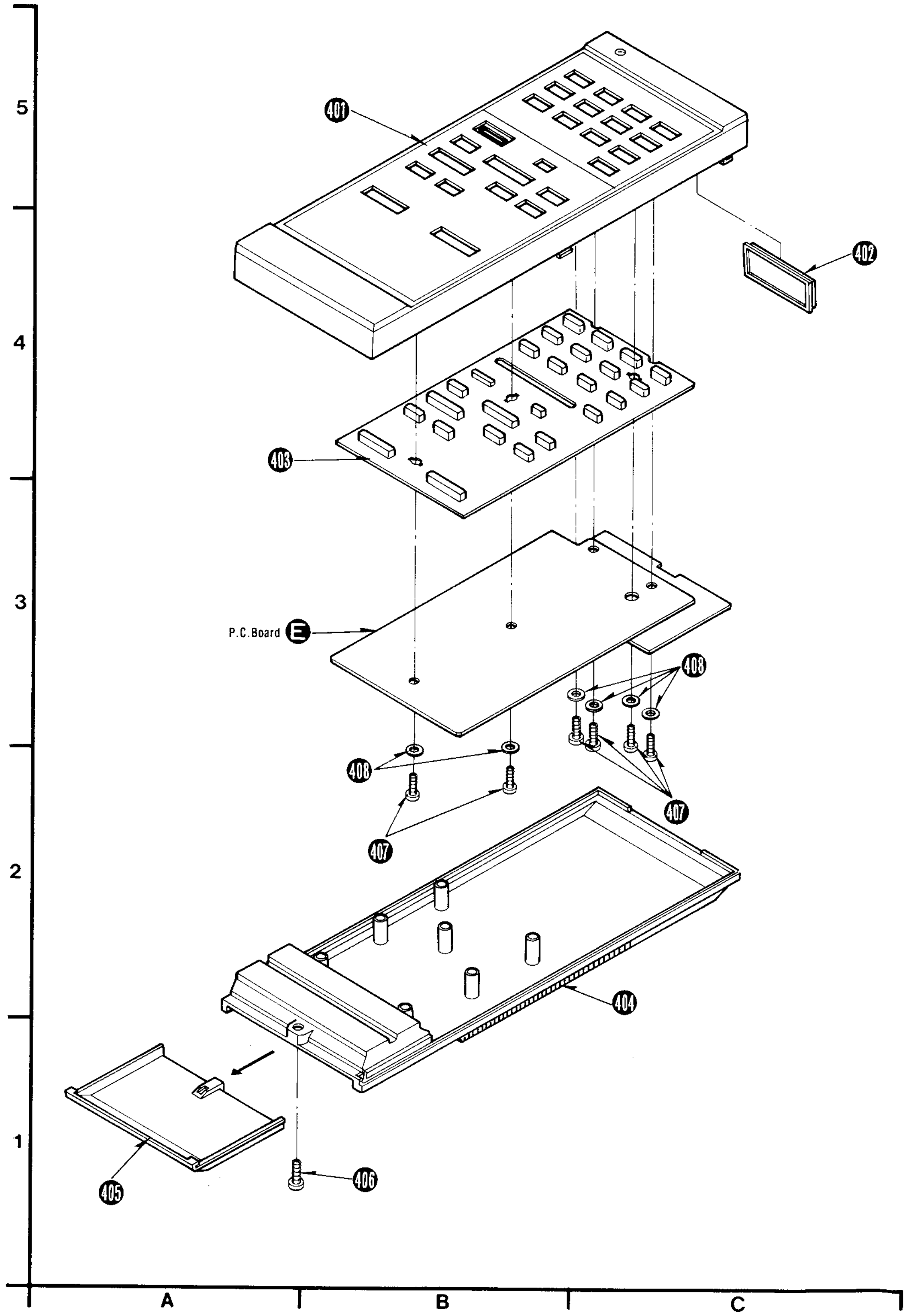
❾ *Remote Controller Section*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402
403
P.C. Board E
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404
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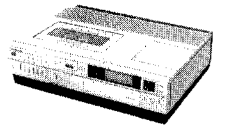
1
A
B
C

MECHANICAL REPLACEMENT PARTS LIST

Model No. NV-7200E/B/EG

Notes:
1. * Be sure to make your orders of replacement parts according to this list.
* "⊕" in Remarks column indicates new parts.



Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
1(1)	VEG0166	D.D Cylinder Unit	1	
2(1)	VEH0121	Upper Cylinder Unit	1	
3(1)	VMA3165	Wire Cover	1	
4(1)	VXA0869	Erase Angle Unit	1	
5(1)	VXA1295	Loading Base Unit	1	
6(1)	VXA1189	Shaft Holder (S) Unit	1	
7(1)	VXA1190	Shaft Holder (T) Unit	1	
8(1)	VXA1191	Inclined Base (S) Unit	1	
9(1)	VXA1084	Inclined Base (B) Unit	1	
10(1)	VXP0325	Loading Gear Unit	2	
11(1)	VXL0754	Loading Arm (R) Unit	1	
12(1)	VXL0753	Loading Arm (L) Unit	1	
13(1)	VXP0302A	Roller Post Unit	1	
14(1)	VXP0302C	Roller Post Unit	1	
15(1)	VMA4436	Shaft Holder Stopper A	2	
16(1)	VMB0669	Loading Spring	2	
17(1)	VMX0257	Arm Sleeve	2	
18(1)	VHN0014	"X" Adjust Nut	1	
19(1)	VML1032	E.H Lever	1	
20(1)	VMB0665	E.H Lever Spring	1	
21(1)	VBS0014	Erase Head	1	
22(1)	VXP0324	Inertia Roller Unit	1	
23(1)	VMB0667	Inertia Roller Arm Spring	1	
24(1)	VEH0138	A/C Head Unit	1	
25(1)	VXA1184	Head Base (B) Unit	1	
26(1)	VMB0404	Adjust Spring	1	
28(1)	VMA4326	Sensor Lamp Angle	1	
29(1)	VMB0754	Supply Limiter Spring	1	
31(1)	VMB0699	P4 Spring	1	
32(1)	VMX0366	Post Sleeve(B)	1	
33(1)	VMX0271	P4 Cap	1	
34(1)	VMA4122	Lead Wire Angle	1	
35(1)	VMB0668	A/C Spring	1	
36(1)	VMD0100	Post Stopper	2	
37(1)	VMX0256	Stopper	1	
305(1)	VMS1768	Under Limiter	1	
306(1)	VMX0288	Collar	1	
307(1)	VDP0759	Supply Roller	1	
308(1)	VMX0297	Upper Limiter	1	
309(1)	VHD0045	Nilon Nut	1	
310(1)	VXA1285	A/C Head Base Unit	1	
311(1)	VMA4289	Nut Bar	1	
312(1)	VHD0054	Adjust Screw	1	
240(1)	XYN3+B10BNS	Screw	2	
241(1)	XYN3+C6	Screw	1	
242(1)	XYN2+C4	Screw	2	
243(1)	XYN3+F8S	Screw	9	
244(1)	XTV3+8F	Screw	48	
245(1)	XTN3+C4S	Screw	2	
246(1)	XXE2D2FP	Setscrew	2	
247(1)	XSS26+6	Screw	1	
248(1)	XXE3A6FP	Setscrew	1	
249(1)	XSN3D10S	Screw	1	
250(1)	XYN3+C8S	Screw	4	
251(1)	XYN3+F12S	Screw	4	
252(1)	XNG3BS	Nut	1	
253(1)	XNG4	Nut	1	
254(1)	XWXV4D9	Polyslider Washer	15	
255(1)	XUEV4FP	Retaining Ring	14	
270(1)	XYN3+F6S	Screw	5	
294(1)	XWG4	Washer	1	
38(2)	VDG0015	Winding Gear	1	
39(2)	VMA3999	Thrust Spring	1	
40(2)	VXL0778	Tension Release Lever Unit	1	
41(2)	VXZ0082	Loading Brake Arm Unit	1	
42(2)	VMB0726	Loading Brake Spring	1	
43(2)	VXZ0077	F.F Soft Brake Unit	1	
44(2)	VMB0727	F.F Soft Brake Spring (A)	1	
45(2)	VXL0787	Tension Arm Board Unit	1	
46(2)	VXL0786	Tension Arm Unit	1	
47(2)	VXZ0088	Brake Lever (L) Unit	1	
48(2)	VXZ0089	Brake Lever (R) Unit	1	
49(2)	VMB0729	Brake Arm Spring	1	
50(2)	VXA1228	Idler Base Unit	1	
51(2)	VXP0344	Idler Unit	1	
52(2)	VXL0772	Ider Arm Unit	1	
53(2)	VXL1107	Idler Lever (A)	1	
54(2)	VML1068	Flection Lever	1	
55(2)	VDP0770	Guide Roller	1	
56(2)	VMB0714	Flection lever Spring	4	
57(2)	VMX0122	Slide Washer	4	
58(2)	VMX0274	Silde Washer (B)	1	
59(2)	VMA4189	Tension Band Base	1	
60(2)	VML1072	F.F Lever(A)	1	
61(2)	VXR0103	Supply Reel Table Unit	1	
62(2)	VXR0102	Takeup Reel Table Unit	1	
63(2)	VXL0780	Winding Gear Arm Unit	1	
64(2)	XMA4185	Chassis Bracket	1	
313(2)	VDV0217	Counter Belt (A)	1	
314(2)	VJR3	Clamper	1	
243(2)	VYN3+F8S	Screw	9	
244(2)	XTV3+8F	Screw	48	
254(2)	XWXV4F9	Polyslider Washer	15	
255(2)	XUEV4FP	Retaining Ring	14	
256(2)	XUEV3FP	Retaining Ring	12	
257(2)	XUC25FP	Retaining Ring	7	
258(2)	XWXV3D6	Polyslider Washer	22	
271(2)	XTV3+10F	Screw	3	
295(2)	XUEV3FX	Retaining Washer	1	
65(3)	VXA0125	Thrust Angle Unit	1	
66(3)	VMD0104	Oil Pool	1	
67(3)	VMX0251	Oil Seal	1	
68(3)	VEM0145	Reel Motor Unit	1	
73(3)	VDV0126	Play Belt	1	
74(3)	VMD0113	Cassette Support	1	
75(3)	VDP0735	Loading Intermediate Pulley Unit	1	
76(3)	VDP0750	Idler Pulley	1	
77(3)	VDV0122	Loading Belt (1)	1	
78(3)	VDV0135	Loading Belt (2)	1	
79(3)	VDP0748	Large Pulley	1	
80(3)	VQL1137	Loading Caution Lavel	1	
81(3)	VXK0468	Unit Base Unit	1	
82(3)	VEM0135	Loading Motor Unit	1	
83(3)	VML1118	Action Slide Lever	1	
84(3)	VMX0122	Slide Washer A	2	
85(3)	VXL0777	Action Lever	1	
86(3)	VMZ0083	Soft Brake (T) Unit	1	
87(3)	VMB0737	Soft Brake Spring (T)	1	
88(3)	VML1074	Pressure Lever	1	
89(3)	VMX0275	Sleeve	1	
90(3)	VMB0719	Pressure Spring	1	
91(3)	VMB0721	Return Spring B	1	
92(3)	VXA1236	Solenid Bracket Unit	1	
93(3)	VSJ0054	Pressure Solenoid	1	
94(3)	VMA4182	P.C. Board Angle	1	
96(3)	VXA1234	Opener Unit	1	
97(3)	VEK0854	Dew Sensor Unit	1	
98(3)	VXL0776	Pressure Roller Arm Unit	1	
99(3)	VMB0720	Return Spring (A)	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
100(3)	VMA4181	Photo Transistor Bracket	1	
102(3)	PN150NV	Photo Transistor	1	
103(3)	VMD0091	Transistor Holder (R)	1	
104(3)	VMB0750	Return Spring (D)	1	
105(3)	VMD0122	Cue Sensor Bracket	1	
107(3)	VEM0125	D.D Capstan	1	
108(3)	VGF0021	Belt Cover	1	
315(3)	VML1073	Solenoid Lever (P)	1	
244(3)	XTV3+8F	Screw	48	
250(3)	XYN3+C8S	Screw	4	
254(3)	XWXV4D9	Polyslider Washer	15	
256(3)	VUEV3FP	Retaining Ring	12	
258(3)	XWXV3D6	Polyslider Washer	22	
259(3)	XTV3+8JFX	Screw	1	
260(3)	XYN3+C6S	Screw	2	
261(3)	XYN3+F12S	Screw	2	
262(3)	XSN3+8S	Screw	1	
263(3)	XYN3+C4S	Screw	3	
264(3)	XYN26+C6S	Screw	2	
265(3)	XTV3+10J	Screw	3	
267(3)	XUC5FP	Retaining Ring	1	
268(3)	XUC3FP	Retaining Ring	13	
269(3)	XWXV3A6	Polyslider Washer	1	
271(3)	XTV3+10F	Screw	3	
272(3)	XYN3+F8S	Screw	7	
277(3)	XWC3BFY	Washer	2	
57(4)	VMX0122	Slide Washer	4	
109(4)	VML1102	Lock Slide Lever	1	
110(4)	VML1103	Lock Lever	1	
111(4)	VML1104	Eject Lever	1	
112(4)	VMB0731	Eject Spring	1	
113(4)	VMB0673	Stop Plate Spring	1	
114(4)	VSH0013	Leaf Switch	1	
115(4)	VXL0782	Main Lever Unit	1	
116(4)	VXL0770	Play Arm (A) Unit	1	
117(4)	VML1070	Play Arm (B)	1	
118(4)	VXP0343	Play Clutch Unit	1	
119(4)	VMX0272	2-6 Washer	2	
120(4)	VMB0716	Play Idler Spring	1	
121(4)	VMB0715	Play Arm Spring	1	
122(4)	VMA4183	Switch Holder A	1	
123(4)	VMA4184	Switch Holder B	1	
124(4)	VSS0048	Mode Selector Switch	1	
125(4)	VJR3	Clamper	1	
126(4)	VXL0791	Chassis Angle B Unit	1	
127(4)	VXK0397	Solenoid Base Unit	1	
128(4)	VXL0792	Solenoid Lever Unit	1	
129(4)	VSJ0055	Play Solenoid	1	
130(4)	VSJ0053	F.F Solenoid	1	
131(4)	VML1082	Tension Release Lever	1	
132(4)	VML1083	Main Brake Release Lever	1	
133(4)	VXL0794	F.F Slide Lever Unit	1	
134(4)	VML1086	Play Slide Lever	1	
135(4)	VML1087	Safety Lever	1	
136(4)	VMA4186	Solenoid Plate (A)	1	
137(4)	VMA4187	Solenoid Plate (B)	1	
138(4)	VDP0772	Counter Intermediate	1	
		Pulley		
139(4)	VMA4188	Tention Spring Hook	1	
140(4)	VXL0793	Solenoid Lever B Unit	1	
141(4)	VMB0725	Tension Arm Spring	1	
142(4)	VMX0122	Slide Washer A	1	
143(4)	VSH0013	Leaf Switch	1	
145(4)	VXL0795	Idler Lever B Unit	1	
146(4)	VMB0713	Idler Spring	1	
147(4)	VMB0732	Tension Release Spring	1	
149(4)	VMA4192	Chassis Angle A	1	
150(4)	VDG0016	Action Gear	1	
151(4)	VMX0268	Action Gear Sleeve	1	
152(4)	VMA4088	Holder	1	
153(4)	VDG0035	Intermediate Gear	1	
154(4)	VDG0752	Cam Gear	1	
155(4)	VXL0784	Sector Gear	1	
156(4)	VMB0717	Idler Spring	1	
157(4)	VXA1240	Lock Bae Unit	1	
316(4)	VMG0217	Stopper	1	
301(4)	XTV4+35A	Screw	1	
243(4)	XYN3+F8S	Screw	6	
244(4)	XTV3+8F	Screw	48	
254(4)	XWXV4D9	Polyslider Washer	15	
255(4)	XUEV4FP	Retaining Ring	14	
256(4)	XUEV3FP	Retaining Ring	12	
257(4)	XUC25FP	Retaining Ring	7	
258(4)	XWXV3D6	Polyslider Washer	22	
265(4)	XTV3+10J	Screw	3	
266(4)	XTV3+6FS	Screw	2	
270(4)	XYN3+F6S	Screw	5	
271(4)	XTV3+10F	Screw	2	
272(4)	XYN3+F8S	Screw	7	
273(4)	XUEV4FP	Retaining Ring	3	
274(4)	XUEV2FP	Retaining Ring	2	
275(4)	XWXV2D4	Polyslider Washer	4	
276(4)	XUC15FP	Retaining Ring	1	
277(4)	XWC3BFY	Washer	2	
278(4)	XWA3B	Washer	1	
279(4)	XNG3CS	Nut	1	
158(5)	VMA4299	Cassette Holder Unit	1	
159(5)	VMW0086	Holder Shaft Unit	1	
160(5)	VMA4003	Holder Angle (L)	1	
161(5)	VMA3988	Adjustment Plate (L)	1	
162(5)	VMA4002	Holder Angle (R)	1	
163(5)	VMA3987	Adjustment Plate (R)	1	
164(5)	VMS1672	Main Shaft Unit	1	
165(5)	VMA3990	Holder Adjustment Plate	2	
166(5)	VMA4191	Stopper Angle	1	
167(5)	VMX0247	Lock Collar	1	
168(5)	VMB0734	Lever Spring	1	
169(5)	VML1110	Sub Arm (L)	1	
170(5)	VML1111	Sub Arm (R)	1	
171(5)	VMB0735	Holder Spring (R)	1	
172(5)	VML1100	Main Arm (R)	1	
173(5)	VMG0215	Cushion	1	
174(5)	VMA4387	Front Reimforcement Plate	1	
		(A)		
175(5)	VMA4388	Rear Reinforcement Plate	1	
		(A)		
176(5)	VMB0730	Cassette Support Spring	2	
177(5)	VMD0092	Transistor Hodler (L)	1	
179(5)	VXA1199	Sensor Angle Unit	1	
180(5)	VML1101	Coupling Rod	1	
181(5)	VMA4716	Transistor Holder Guard	1	
182(5)	VMB0674	Holder Spring (L)	1	
183(5)	VMG0206	Stopper Rubber (B)	1	
184(5)	VDG0036	Damper	1	
187(5)	VEK1247	Out Put Terminal Unit	1	
188(5)	ENC-17351	RF Converter	1	For NV-7200E ⚠
188(5)	ENC-17352	RF Converter	1	For NV-7200B ⚠
190(5)	VMA4730	P.C. Board Set Angle	1	
192(5)	VDC0026	Counter Unit	1	
198(5)	VMA4384	Transformer Angle	1	⚠
199(5)	VTP0057	Transformer	1	For NV-7200E ⚠
199(5)	VTP0058	Transformer	1	For NV-7200B ⚠
200(5)	VMA4221	Power Cord Support Angle	1	⚠
203(5)	VMA4708	Left Angle	1	
205(5)	VMD0269	Cassette Guide	1	
206(5)	VEK1241	Radiating Plate	1	For NV-7200E
206(5)	VEK1242	Radiating Plate	1	For NV-7200B
208(5)	VHD0052	Screw	1	
317(5)	VKF0104	Blind	1	
318(5)	VMB0778	Blind Spring	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
319(5)	VGK1012	Power Cord Sheet	1	
320(5)	VMZ0339	Power Barrier	1	⚠
321(5)	VMA4731	Control P.C. Board Angle (Under)	1	
322(5)	VMA4732	Timer P.C. Board Angle (Under)	1	
323(5)	VMA4203	P.C. Board Angle (Front)	1	
324(5)	VMA4205	P.C. Board Angle (Center)	1	
325(5)	VMA4204	P.C. Board Angle (Rear)	1	
326(5)	VDV0137	Counter Belt	1	
254(5)	XWXV4D9	Polyslider Washer	15	
257(5)	XUC25FP	Retaining Ring	7	
258(5)	XWXV3D6	Polyslider Washer	22	
268(5)	XUC3FP	Retaining Ring	13	
272(5)	XYN3+F8S	Screw	7	
277(5)	XWC3BF	Washer	2	
281(5)	XTV3+10G	Screw	17	
283(5)	XTV3+8FR	Screw	3	
284(5)	XYN3+C6S	Screw	9	
285(5)	XYN3+F6S	Screw	6	
286(5)	XYN3+8S	Screw	1	
287(5)	XTV3+6F	Screw	1	
288(5)	XYN3+C8	Screw	1	
289(5)	XTV3+8F	Screw	14	
290(5)	XUC15F	Retaining Ring	1	
296(5)	XTV3+14GR	Screw	6	
297(5)	XYN4+C25S	Screw	1	
298(5)	XYN3+F8RS	Screw	4	
299(5)	XTV3+10JK	Screw	2	
300(5)	XTV+15A	Screw	4	
302(5)	XTV26+6B	Screw	2	
303(5)	XTV3+6S	Screw	5	
304(5)	XYN3+F5S	Screw	2	
370(5)	XYN4+C5S	Screw	1	
371(5)	XTS3+8F	Screw	2	
207(6)	VYK0278	Preset VR Case	1	For NV-7200E
207(6)	VYK0198	Preset VR Case	1	For NV-7200B
217(6)	ENPE713	Antenna Terminal Unit	1	⚠
218(6)	VHN0017	Clip	2	
222(6)	VGQ0165	Battery Holder	1	
327(6)	VGQ0225	Display Tube Holder	2	
328(6)	VMA4773	Timer P.C. Board Angle (Upper)	1	
329(6)	VQL1284	Battery Caution Label	1	
330(6)	VMF0195	Switch Cover	1	
272(6)	XTN3+F8S	Screw	7	
281(6)	XTV3+10G	Screw	17	
224(7)	VYP0449	Top Panel Unit (Black)	1	For NV-7200E/B
224(7)	VYP0529	Top Panel Unit (Silver)	1	For NV-7200E/B
225(7)	VMA4199	Top Panel Reinforcement Angle	1	
226(7)	VGP0476	Cassette Cover (Black)	1	For NV-7200E/B
226(7)	VGP0475	Cassette Cover (Silver)	1	For NV-7200E/B
227(7)	VYP0527	Front Panel Unit (Black)	1	For NV-7200E/B
227(7)	VYP0528	Front Panel Unit (Silver)	1	For NV-7200E/B
228(7)	VKU0146	Bottom Plate	1	
229(7)	VEQ0225A	Demodulator Unit	1	For NV-7200E
229(7)	VEQ0226A	Demodulator Unit	1	For NV-7200B
230(7)	VYK0281	Preset Cover Unit (Black)	1	For NV-7200E
230(7)	VYK0283	Preset Cover Unit (Black)	1	For NV-7200B
230(7)	VYK0282	Preset Cover Unit (Silver)	1	For NV-7200E
230(7)	VYK0284	Preset Cover Unit (Silver)	1	For NV-7200B
231(7)	VKF0099	Timer Door (Black)	1	For NV-7200E/B
231(7)	VKF0092	Timer Door (Silver)	1	FOR NV-7200E/B
234(7)	VGQ0160	Power Button Holder	1	
235(7)	VMB0738	Power Button Spring	3	
236(7)	VGT0166	Dolby/Timer Rec Button	2	
237(7)	VGU0246	Power Button (B)	1	
238(7)	VHD0055	Screw (Cassette Cover)	2	
239(7)	VSC0497	Shield Case	1	
331(7)	VGQ0220	Door Holder (R)	1	
332(7)	VGQ0221	Door Holder (L)	1	
333(7)	VGQ0166	Slide Door	1	
334(7)	VGK0969	Slide Door Cover	1	
335(7)	VGU0245	Power Button (A)	1	
336(7)	VGK0895	Tracking Plate	1	
337(7)	VKA0016	Rubber Foot	4	
338(7)	VHD0059	Screw (Bottom Plate)	6	
339(7)	VGU0249	Memory Counter Button	2	
340(7)	VMB0865	Memory Counter Spring	2	
341(7)	VQL1290	Caution Label	1	
342(7)	VMA4219	Mechcon P.C. Board Angle	1	
343(7)	VMZ0343	Barrier Seat	1	
344(7)	VQL1285	Cassette Cover Seat	1	
244(7)	XTV3+8F	Screw	48	
282(7)	XSB4+10FK	Screw	2	
283(7)	XTV3+8FR	Screw	1	
291(7)	XTV3+8G	Screw	2	
292(7)	XTW3+8LR	Screw	5	
293(7)	XWC3BFY	Washer	1	
296(7)	XTV3+14GR	Screw	3	
350(8)	VPN0680	Left Cushion	1	
351(8)	VPN0679	Right Cushion	1	
352(8)	VSQ0186	Remote Control Unit (Black)	1	For NV-7200E/B
352(8)	VSQ0185	Remote Control Unit (Silver)	1	For NV-7200E/B
353(8)	VJA0130	DIN-DIN Coaxial Cable	1	
354(8)	VZZ0004	Dust Cover	1	
355(8)	NV-E120	Blank Tape	1	For NV-7200B
358(8)	VQF0663	Fan Bag (Black, Silver)	1	For NV-7200E ⚠
359(8)	VQF0664	Fan Bag (Black, Silver)	1	For NV-7200B ⚠
362(8)	VPG0938	Packing Case (Black)	1	For NV-7200E
362(8)	VPG0940	Packing Case (Black)	1	For NV-7200B
362(8)	VPG0937	Packing Case (Silver)	1	For NV-7200E
362(8)	VPG0939	Packing Case (Silver)	1	For NV-7200B
		Remote Control Unit		
401(9)	VKM0118	Case (Upper) (Silver)	1	
401(9)	VKM0119	Case (Upper) (Black)	1	
402(9)	VKW0066	Smork Board	1	
403(9)	VSP0114	Rubber Plate	1	
404(9)	VKM0117	Case (Bottom)	1	
405(9)	VKF0107	Battery Cover	1	
406(9)	XTN3+6G	Screw	1	
407(9)	XTN2+4G	Screw	6	
408(9)	XWE2	Washer	6	

ELECTRICAL REPLACEMENT PARTS LIST

Model No. NV-7200E/B/EG

Notes:
1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified by ⚠ have special characteristics important for safety. When replacing any of these components, use only the original ones.
3. Unless otherwise specified,
   All resistors are in OHMS (Ω), 1/8W ± 5% carbon. K=1,000Ω, M=1,000KΩ.
   All capacitors are in MICROFARADS (μF), ± 10% P=μμF.

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
	VEP0193A	Power Supply P.C. Board	1	⚠
	VEP02120A	Servo/Still P.C. Board	1	
	VEP03114A	Video/Audio P.C. Board	1	NV-7200-E,B
	VEP03114B	Video/Audio P.C. Board	1	NV-7200-EG
	VEP06129A1	System Control P.C. Board	1	
	VEP06130A	Key Board P.C. Board	1	
	VEP07108A	Demodulator P.C. Board	1	NV-7200-E,EG
	VEP07108B	"	1	NV-7200-B
	VEP07109A	Tuner P.C. Board	1	NV-7200-E,EG
	VEP07109B	"	1	NV-7200-B
	VEP07110A	Timer Operation P.C. Board	1	
	VEP07111A	Timer P.C. Board	1	
	VJB00518	Mode Selector P.C. Board	1	
	VJB00566	A/C Head P.C. Board	1	
	VJB00573	Power Tr. P.C. Board	1	
	VJB00575	Memory SW P.C. Board	1	
	VJB00591	Tape Slack Sensor P.C.	1	
		Board		
	VJB00606	Power Timer NR SW P.C.	1	
		Board		
	VJB00636	Take up Photo Tr. P.C.	1	
		Board		
	VJB00638	Pressure Solenoid P.C.	1	
		Board		
	VJB00639	Sensor Lamp P.C. Board	1	
	VJB00653	Rear Jack P.C. Board	1	
	VJB00705	Review Sensor Connection	1	
		P.C. Board		
	VJB00709	Supply Sensor P.C. Board	1	
	VJB00713	Review Sensor P.C. Board	1	
	ENC17351	RF Converter	1	NV-7200-E,EG ⚠
	ENC17352	RF Converter	1	NV-7200-B ⚠
	VXA1249	Cue Sensor Unit	1	
	ESD14130	Colour/Test Switch	1	
	VSB0001	Back-up Battery	1	
	VSC0492	Shield Case	1	
	VSC0500	Shield Case	1	
	ERD50TJ561A	Resistor	1	
	LN55	LED	1	
	PN205	Photo Transistor	1	
	PN150NV	Photo Transistor	1	
		Fuses		
F1001	XBA2C10TRO	1A	1	⚠
F1002	XBA2C40TRONU	4A	1	⚠
F1003	XBA2C16TRO	1.6A	1	⚠
		Power Transformer		
	VTP0057		1	NV-7200-E,EG ⚠
	VTP0058		1	NV-7200-B ⚠
		Integrated Circuit		
IC1501	HA17806		1	
		Power Transistor		
TR1501	2SA1061		1	⚠
		AC cords		
	VJA0111		1	NV-7200-E,EG ⚠
	VJA0112		1	NV-7200-B ⚠
	VJF0017	AC Cord Bushing	1	⚠
	VMX0237	Terminal Cover	1	
	VSC0600	Heat Sink	1	
	TJC6320	Fuse Holder	1	⚠
	ENPE713	Antenna Boothter	1	⚠
	VSC0605	Heat Sink for IC	1	
	XNG3BS	Nut	2	
	XYN3+F128	Screw	2	
	VMB0751	Spring	1	
	VSC0604	Heat Sink	1	
	XNG3BS	Nut	1	
	XYN3+A10S	Screw	1	
	VGT0214	Tracking Knob	1	
	VJH0118	Input Jack	1	
	VJS1171	4 Pin Socket	3	
	VSC0493-1	Shield Case	1	
	VSC0494	Shield Case	1	
	XTV3+8J	Screw	2	
		POWER SUPPLY		
		PRINTED CIRCUIT BOARD		
		Transistors		
Q1001	2SC1318		1	
Q1002	2SC1684		1	
Q1003	2SC1847V		1	
Q1004	2SC1826		1	
Q1005	2SD767		1	
Q1006	2SD767		1	
Q1007	2SC1318A		1	
Q1008	2SD767		1	
		Diodes		
D1001-1004	30DI		4	⚠
D1005	MA26T0B		1	
D1006-1008	10E1		3	⚠ (D1007, D1008)
D1009	MA165		1	
D1010	RD6.2EB		1	
D1011,1012	10E2		2	
D1013	RD13EB		1	
D1014	10E1		1	
D1015	RD18EB		1	
D1016	MA165		1	
D1017	QA106SB		1	
D1018	MA165		1	
D1019-1022	10E1		4	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Resistors		
R1001	ERD25TJ222	2.2K	1	
R1002	ERD25TJ392	3.9K	1	
R1003	ERD25TJ122	1.2K	1	
R1004	ERD25TJ102	1K	1	
R1005	ERD25TJ122	1.2K	1	
R1006	EVN50AA00B52	Variable 500	1	
R1007	ERD25TJ152	1.5K	1	
R1008	ERD25TJ223	22K	1	
R1009	ERD25TJ821	820	1	
R1010	ERD25TJ223	22K	1	
R1011	ERD25TJ103	10K	1	
R1012	ERD25TJ104	100K	1	
R1013	ERG12ANJ153	1/2W 15K	1	
R1014	ERD25TJ222	2.2K	1	
R1015	ERD25TJ332	3.3K	1	
R1016	ERD25TG3902	39K	1	
R1017	ERD25TG6801	6.8K	1	
R1018	ERD25TJ222	2.2K	1	
R1019	ERQ14AJ121	120	1	⚠
R1020	ERQ14AJ220	22	1	⚠
		Capacitors		
C1001	ECKD1H103KB	Ceramic 50V 0.01	1	
C1002	ECES1VV332	Electrolytic 35V 3300	1	
C1003	ECES1VV222	Electrolytic 35V 2200	1	
C1004	ECEA1CS101	Electrolytic 16V 100	1	
C1005	ECEA1CS332	Electrolytic 16V 3300	1	
C1006	ECEA1ES470	Electrolytic 25V 47	1	
C1007	ECKD1H681KB	Ceramic 50V 680P	1	
C1008	ECEA1CS331	Electrolytic 16V 330	1	
C1009	ECEA1CS101	Electrolytic 16V 100	1	
C1010	ECEA2AS221	Electrolytic 100V 220	1	
C1011	ECEA2AS470	Electrolytic 100V 47	1	
C1012	ECEA1ES221	Electrolytic 25V 220	1	
C1013	ECEA1JS100	Electrolytic 63V 10	1	
C1014	ECEA1VS101	Ceramic 35V 100	1	
C1015	ECEA1CS470	Ceramic 16V 47	1	
		Connectors		
P1001	VJP1148	2P	1	
P1002	VJP1150	5P	1	
P1003	VJP1150	5P	1	
P1004	VJP1148	2P	1	
P1005	VJP1150	5P	1	
P1006	VJP1151	6P	1	
P1007	VJP1145	6P	1	
		Miscellaneous		
	VMZ0338	Fuse Cover	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		OPERATION PRINTED CIRCUIT BOARD		
		Integrated Circuits		
IC6501	AN5020		1	
IC6502	MN1400EY		1	
		Transistors		
Q6501,6502	2SD636		2	
		Diodes		
D6501	PH302		1	
D6502-6509	MA165		8	
D6512-6517	LN81RCPHL		6	
D6518-6529	MA165		12	
D6530	LN316CPHLMU		1	
D6531,6532	MA165		2	
D6533	LN41YCPHLM		1	
		Resistors		
R6501	ERD10TJ272	2.7K	1	
R6502	ERD10TJ154	150K	1	
R6503	ERD10TJ151	150	1	
R6504	EVN38CA00B13	Variable 1K	1	
R6505	ERD10TJ101	100	1	
R6506	ERD10TJ681	680	1	
R6507	ERD10TJ681	680	1	
R6508	ERD10TJ151	150	1	
R6511	ERD10TJ102	1K	1	
R6512	EVNK6AA00B24	Variable 20K	1	
R6513	ERD10TJ101	100	1	
R6514,6515	ERD10TJ223	22K	2	
R6517-6520	ERD25TJ122	1.2K	4	
R6522	ERD25TJ122	1.2K	1	
		Capacitors		
C6501	ECEA1HK2R2	Electrolytic 50V 2.2	1	
C6502	ECKD1H681KB	Ceramic 50V 680P	1	
C6503	ECEA1HK0R1	Electrolytic 50V 0.1	1	
C6504	ECEA1HK0R1	Electrolytic 50V 0.1	1	
C6505	ECEA1CK100	Electrolytic 16V 10	1	
C6506	ECEA1CK330	Electrolytic 16V 33	1	
C6507	ECQP1332J	Mylar 100V 0.0033	1	
C6508	ECKD1H102KB	Ceramic 50V 0.001	1	
C6509	ECEA1HS010	Electrolytic 50V 1	1	
C6510	ECEA50ZR47	Electrolytic 50V 0.47	1	
C6511	ECKD1H103KB	Ceramic 50V 0.01	1	
C6512	ECCD1H221KU	Ceramic 50V 220P	1	
C6513	ECEA1EK4R7	Electrolytic 25V 4.7	1	
C6514	ECEA1CK100	Electrolytic 16V 10	1	
C6515	ECEA0JK101	Electrolytic 6.3V 100	1	
C6516	ECKD1H103ZF	Ceramic 50V 0.01	1	
		Transformer		
T6501	ELM10Q001A		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Connectors		
P6051	VJP1145		1	
P6502	VJP1146		1	
P6503	VJP1141		1	
P6504	VJP1221		1	
P6505	VJP1224		1	
		Switches		
S6501-6510	EVQPYT12K		10	
S6511,6512	EVQQJ104K		2	
S6513	VSP0111		1	
S6515	EVQPYT12K		1	
		Complex Component		
RX6501	EXBP87682K		1	
		Miscellaneous		
TH6501	ERTD2ZHK104S		1	
	VSC0601	Shield Case	1	
	VSC0602	Shield Case	1	
	VSC0603	Shield Case	1	
	VJS1143	5P	1	
	VJS1155		5	
		SERVO CONTROL PRINTED CIRCUITS		
		Integrated Circuits		
IC2001	AN6350		1	
IC2002	AN6677		1	
IC2003	DN819		1	
IC2004	μPD4528C		1	
IC2005	AN6341N		1	
IC2006	AN6676		1	
IC2007	AN6345		1	
IC2008	STA321		1	
		Transistors		
Q2001	2SD636		1	
Q2002,2003	2SD889		2	
Q2004-2007	2SD636		4	
Q2008	2SB641		1	
Q2009-2012	2SD636		4	
Q2013	2SB641		1	
Q2014-2018	2SD636		5	
Q2019	2SB641		1	
Q2020	2SC1983		1	
Q2021-2024	2SD636		4	
Q2025	2SB641		1	
Q2026-2028	2SD636		3	
Q2029-2031	2SB641		3	
Q2032-2034	2SD636		3	
Q2038	2SB642		1	
Q2039	2SD636		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Diodes		
D2001-2012	MA165		12	
D2013	RD18EB		1	
D2014-2022	MA165		9	
D2024	MA165		1	
D2027-2032	MA165		6	
D2033	RD5.1B		1	
D2034	MA165		1	
D2035	MA26W0		1	
D2036-2045	MA165		10	
D2046-2051	10E1		6	
D2052,2053	MA165		2	
		Resistors		
R2001	ERD10TJ104	100K	1	
R2002	ERD10TJ562	5.6K	1	
R2003	ERD10TJ104	100K	1	
R2004	ERD10TJ183	18K	1	
R2005	ERD10TJ332	3.3K	1	
R2006	ERD10TJ1433	143K	1	
R2007	EVN38CA00B54	Variable 50K	1	
R2008	ERD10TJ184	180K	1	
R2009	ERD10TJ332	3.3K	1	
R2010	ERD10TJ153	15K	1	
R2011	ERD10TJ333	33K	1	
R2012	ERD10TJ153	15K	1	
R2013	ERD10TJ683	68K	1	
R2014	ERD10TJ563	56K	1	
R2015	EVNK6AA00B54	Variable 50K	1	
R2016	ERD10TJ124	120K	1	
R2017,2018	ERD10TJ105	1M	2	
R2019	EVNK6AA00B54	Variable 50K	1	
R2020	ERD10TJ682	6.8K	1	
R2021	EVNK6AA00B54	Variable 50K	1	
R2022	ERD10TJ682	6.8K	1	
R2023	EVNK6AA00B15	Variable 100K	1	
R2024	ERD10TJ683	68K	1	
R2025	ERD10TJ123	12K	1	
R2026	ERD10TJ562	5.6K	1	
R2027	ERD10TG6802	68K	1	
R2028	ERD10TJ332	3.3K	1	
R2029	ERD10TG4701	4.7K	1	
R2030	ERD10TJ271	270	1	
R2031	ERD10TG2201	2.2K	1	
R2032	ERD10TJ473	47K	1	
R2033	ERD10TJ152	1.5K	1	
R2034	ERD10TJ273	27K	1	
R2035	ERD10TJ561	560	1	
R2036	ERD10TJ153	15K	1	
R2037	ERD10TJ471	470	1	
R2038	ERD10TJ103	10K	1	
R2039	ERD10TJ104	100K	1	
R2040	ERD10TJ152	1.5K	1	
R2041	ERD10TJ822	8.2K	1	
R2042	ERD10TJ105	1M	1	
R2043	ERD10TJ1803	180K	1	
R2044	ERD10TJ562	5.6K	1	
R2045	ERD10TJ104	100K	1	
R2046	ERD10TJ183	18K	1	
R2047	ERD10TJ332	3.3K	1	
R2048,2049	ERD10TJ563	56K	2	
R2050-2052	ERD25TJ220	22	3	
R2053	ERX12ANJR68	0.68	1	
R2054	ERD10TJ124	120K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R2055	ERD10TJ153	15K	1	
R2056	ERD10TJ272	2.7K	1	
R2057	ERD10TJ223	22K	1	
R2058-2060	ERD10TJ103	10K	3	
R2061	ERD10TJ104	100K	1	
R2062	ERD10TJ333	33K	1	
R2063	ERD10TJ683	68K	1	
R2064	ERD10TJ333	33K	1	
R2065	ERD10TJ683	68K	1	
R2066	ERD10TJ562	5.6K	1	
R2067	EVNK6AA00B25	Variable 200K	1	
R2068	ERD10TJ103	10K	1	
R2069	ERD10TJ153	15K	1	
R2070	ERD10TJ333	33K	1	
R2071	ERD10TJ332	3.3K	1	
R2072,2073	ERD10TJ393	39K	2	
R2074	ERD10TJ562	5.6K	1	
R2075,2076	ERD10TJ222	2.2K	2	
R2077	ERD10TJ333	33K	1	
R2078	ERD10TJ153	15K	1	
R2079	ERD10TJ221	220	1	
R2080	ERD10TJ153	15K	1	
R2081-2083	ERD10TJ563	56K	3	
R2084	ERD10TJ154	150K	1	
R2085	EVN38CA00B24	Variable 20K	1	
R2086,2087	ERD10TJ273	27K	2	
R2088	ERD10TG3901	3.9K	1	
R2089	ERC14GJ685V	6.8M	1	
R2090	ERD10TG1801	1.8K	1	
R2091,2092	ERD10TJ221	220	2	
R2093	ERD10TG1801	1.8K	1	
R2094	ERD10TG8202	82K	1	
R2095	ERD10TJ332	3.3K	1	
R2096	ERD10TG5602	56K	1	
R2097-2099	ERD10TJ563	56K	3	
R2100	ERD10TJ104	100K	1	
R2101	ERD10TJ272	2.7K	1	
R2102	ERD10TJ221	220	1	
R2103	ERD10TJ273	27K	1	
R2104	ERD10TJ154	150K	1	
R2105	ERD10TJ103	10K	1	
R2106	ERD10TJ683	68K	1	
R2107	ERD10TJ153	15K	1	
R2108,2109	ERD10TJ563	56K	1	
R2110	ERD10TJ393	39K	1	
R2111	ERD10TJ563	56K	1	
R2112	ERD10TJ563	56K	1	
R2113	ERD10TJ333	33K	1	
R2114	ERD10TJ183	18K	1	
R2115	ERD10TJ102	1K	1	
R2116	ERD10TJ153	15K	1	
R2117	ERD10TJ563	56K	1	
R2118	ERD10TJ393	39K	1	
R2119	ERD10TJ103	10K	1	
R2120	ERD10TJ223	22K	1	
R2121	ERD10TJ563	56K	1	
R2122	ERD10TJ393	39K	1	
R2123	EVNK6AA00B15	Variable 100K	1	
R2124	ERD10TJ103	10K	1	
R2125	ERD10TJ563	56K	1	
R2126	ERD10TJ183	18K	1	
R2127	ERD10TJ682	6.8K	1	
R2128	ERD10TJ104	100K	1	
R2129	ERD10TJ153	15K	1	
R2130	ERD10TJ473	47K	1	
R2131	ERD10TJ122	1.2K	1	
R2132	ERD10TJ152	1.5K	1	
R2133	ERD10TJ392	3.9K	1	
R2134	ERD10TJ122	1.2K	1	
R2135	ERD10TJ273	27K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R2136	ERD10TJ103	10K	1	
R2137	ERD10TJ333	33K	1	
R2138	EVN38CA00B24	Variable 20K	1	
R2139	ERD10TJ333	33K	1	
R2140	ERD10TJ154	150K	1	
R2141	ERD10TJ473	47K	1	
R2142	ERD10TJ224	220K	1	
R2143	ERD10TJ104	100K	1	
R2144	ERD10TJ154	150K	1	
R2145	ERD10TJ333	33K	1	
R2146	EVN38CA00B24	Variable 20K	1	
R2147	ERD10TJ393	39K	1	
R2148	ERD10TJ472	4.7K	1	
R2149	ERD25TJ155	1.5M	1	
R2150	ERD10TJ102	1K	1	
R2151	ERD10TJ332	3.3K	1	
R2152	ERD10TJ102	1K	1	
R2153	ERD10TJ472	4.7K	1	
R2154	ERD10TJ563	56K	1	
R2155	ERD10TJ102	1K	1	
R2156	ERX12ANJR51	50	1	⚠
R2157	ERD10TJ222	2.2K	1	
R2158	ERD10TJ153	15K	1	
R2159-61	ERG12ANJ330	33	3	
R2162	ERD10TJ822	8.2K	1	
R2163	ERD10TJ103	10K	1	
R2164	ERD10TJ183	18K	1	
R2165	ERD10TJ104	100K	1	
R2166	ERD10TJ563	56K	1	
R2167-2170	ERD10TJ104	100K	4	
		Capacitors		
C2002	ECQM1H472KZ	Mylar 50V 0.0047	1	
C2003	ECEA1HS010	Electrolytic 50V 1	1	
C2004	ECQM1H103KZ	Mylar 50V 0.01	1	
C2005	ECQV05334JZ	Mylar 50V 0.33	1	
C2006	ECQV05683JZ	Mylar 50V 0.068	1	
C2007	ECQV05224JZ	Mylar 50V 0.22	1	
C2008	ECEA1HS010	Electrolytic 50V 1	1	
C2009	ECEA1HS010	Electrolytic 50V 1	1	
C2010	ECQM1H683KZ	Mylar 50V 0.068	1	
C2011	ECQM1H683KZ	Mylar 50V 0.068	1	
C2012	ECQM1H273KZ	Mylar 50V 0.027	1	
C2013	ECQV05104JZ	Mylar 50V 0.1	1	
C2014	ECQV05104JZ	Mylar 50V 0.1	1	
C2015	ECEA16Z100	Electrolytic 16V 10	1	
C2016	ECQM1H562KZ	Mylar 50V 0.0056	1	
C2017	ECEA1CS100	Electrolytic 16V 10	1	
C2018	ECQM1H103KZ	Mylar 50V 0.01	1	
C2019	ECEA50ZR68	Electrolytic 50V 0.68	1	
C2020	ECEA1HN010	Electrolytic 50V 1	1	
C2021	ECEA1HN010	Electrolytic 50V 1	1	
C2022	ECEA1HN010	Electrolytic 50V 1	1	
C2023	ECEA1CS101	Electrolytic 16V 100	1	
C2024	ECQM1H103KZ	Mylar 50V 0.01	1	
C2025	ECQM1H333KZ	Mylar 50V 0.033	1	
C2026	ECSF16E3R3	Tantalum 16V 3.3	1	
C2027	ECEA1ES470	Electrolytic 25V 47	1	
C2028	ECEA1CS100	Electrolytic 16V 10	1	
C2029	ECQM1H822JZ	Mylar 50V 0.0082	1	
C2030	ECEA50ZR22	Electrolytic 50V 0.22	1	
C2031	ECEA50ZR22	Electrolytic 50V 0.22	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
C2032	ECEA50ZR22	Electrolytic 50V 0.22	1	
C2033	ECEA50Z2R2	Electrolytic 50V 2.2	1	
C2034	ECKD1H103KB	Ceramic 50V 0.01	1	
C2035	ECQV05683JZ	Mylar 50V 0.068	1	
C2036	ECQV05184JZ	Mylar 50V 0.18	1	
C2037	ECQV05104JZ	Mylar 50V 0.1	1	
C2038	ECQV05104JZ	Mylar 50V 0.1	1	
C2039	ECEA1CS470	Electrolytic 16V 47	1	
C2040	ECEA1CS470	Electrolytic 16V 47	1	
C2041	ECQM1H103KZ	Mylar 50V 0.01	1	
C2042	ECEA50ZR1	Electrolytic 50V 0.1	1	
C2043	ECEA1CS221	Electrolytic 16V 220	1	
C2044	ECQM1H223KZ	Mylar 50V 0.022	1	
C2045	ECKD1H102KB	Ceramic 50V 0.001	1	
C2046	ECQV05124JZ	Mylar 50V 0.12	1	
C2047	ECEA1CS100	Electrolytic 16V 10	1	
C2048	ECQM1H472KZ	Mylar 50V 0.0047	1	
C2049	ECQM1H393KZ	Mylar 50V 0.039	1	
C2050	ECEA1CS220	Electrolytic 16V 22	1	
C2051	ECQV05224JZ	Mylar 50V 0.22	1	
C2052	ECQM1H334JS	Mylar 50V 0.33	1	
C2053	ECQV05104JZ	Mylar 50V 0.1	1	
C2054	ECQV05104JZ	Mylar 50V 0.1	1	
C2055	ECQM1H123JZ	Mylar 50V 0.012	1	
C2056	ECQM1H472JZ	Mylar 50V 0.0047	1	
C2057	ECEA10Z100	Electrolytic 10V 10	1	
C2058	ECQM1H822JZ	Mylar 50V 0.0082	1	
C2059	ECQM1H103KZ	Mylar 50V 0.01	1	
C2060	ECQV05334JZ	Mylar 50V 0.33	1	
C2061	ECEA50Z2R2	Electrolytic 50V 2.2	1	
C2062	ECEA50Z2R2	Electrolytic 50V 2.2	1	
C2063	ECEA50Z2R2	Electrolytic 50V 2.2	1	
C2064	ECEA50ZR33	Electrolytic 50V 0.33	1	
C2065	ECEA50ZR33	Electrolytic 50V 0.33	1	
C2066	ECEA50ZR33	Electrolytic 50V 0.33	1	
C2067	ECQM1H393KZ	Mylar 50V 0.039	1	
C2068	ECEA0JS221	Electrolytic 6.3V 220	1	
C2069	ECEA16Z47	Electrolytic 16V 47	1	
C2070	ECQM1H683KZ	Mylar 50V 0.068	1	
C2071	ECEA16Z33	Electrolytic 16V 33	1	
C2072	ECEA16Z33	Electrolytic 16V 33	1	
C2073	ECQM1H473KZ	Mylar 50V 0.047	1	
C2074	ECQV05184JZ	Mylar 50V 0.18	1	
C2075	ECQV05104JZ	Mylar 50V 0.1	1	
C2076	ECEA1CS100	Electrolytic 16V 10	1	
C2077	ECEA50ZR1	Electrolytic 50V 0.1	1	
C2078	ECQV05274JZ	Mylar 50V 0.27	1	
C2079	ECKD1H103KB	Ceramic 50V 0.01	1	
C2080	ECEA1CS100	Electrolytic 16V 10	1	
C2081	ECEA1HS010	Electrolytic 50V 1	1	
C2082	ECEA1HN010	Electrolytic 50V 1	1	
C2083	ECQM1H103KZ	Mylar 50V 0.01	1	
C2084	ECEA50ZR1	Electrolytic 50V 0.1	1	
C2085	ECEA1CS101	Electrolytic 16V 100	1	
C2086	ECEA1HS330	Electrolytic 50V 33	1	
		Coils		
L2001	VLQ80W102K		1	
L2002	VLQ80W561K		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Connectors		
P2001	VJP1141	2P	1	
P2002	VJP1147		1	
P2003	VJP1143	5P	1	
P2004	VJP1144	6P	1	
P2005	VJP1188		1	
P2006	VJP1143	5P	1	
		STILL PRINTED CIRCUIT BOARD		
		Integrated Circuits		
IC6701	μPD4013BC		1	
IC6702	μPD4011BC		1	
IC6703	μPD4081C		1	
IC6704	μPD4071C		1	
IC6705	μPD4011BC		1	
IC6706	μPD4013BC		1	
		Transistors		
Q6701-6703	2SB641		3	
Q6704-6708	2SD636		5	
Q6709	2SB641		1	
Q6710,6711	2SD636		2	
		Diodes		
D6701	0A90		1	
D6702-6704	MA165		3	
D6705	0A90		1	
D6706-6724	MA165		19	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Resistors		
R6701	ERD10TJ103	10K	1	
R6702	ERD10TJ472	4.7K	1	
R6703	ERD10TJ153	15K	1	
R6704	ERD10TJ223	22K	1	
R6705	ERD10TJ563	56K	1	
R6706,6707	ERD10TJ334	330K	2	
R6708	ERD10TJ103	10K	1	
R6709	ERD10TJ153	15K	1	
R6710,6711	ERD10TJ103	10K	1	
R6712	ERD10TJ563	56K	1	
R6713,6714	ERD10TJ104	100K	1	
R6715	EVNK6AA00B25	Variable 200K	1	
R6716	ERD10TJ103	10K	1	
R6717	ERD10TJ104	100K	1	
R6718	ERD10TJ393	39K	1	
R6719	ERD10TJ223	22K	1	
R6721	ERD10TJ104	100K	1	
R6722	ERD10TJ823	82K	1	
R6724	ERD10TJ223	22K	1	
R6725	EVNK6AA00B25	Variable 200K	1	
R6726	ERD10TJ103	10K	1	
R6727	ERD10TJ224	220K	1	
R6728	ERD10TJ103	10K	1	
R6730	EVNK6AA00B25	Variable 200K	1	
R6731	ERD10TJ103	10K	1	
R6732	ERD10TJ224	220K	1	
R6733	ERD10TJ103	10K	1	
R6734-6736	ERD10TJ104	100K	1	
R6737	ERD10TJ562	5.6K	1	
R6738	EVLV3U00MB25	Variable 200K	1	
R6739	EVNK6AA00B25	Variable 200K	1	
R6740	EVNK6AA00B15	Variable 100K	1	
R6741,6742	ERD10TJ103	10K	2	
R6743	ERD10TJ224	220K	1	
R6744	ERD10TJ683	68K	1	
R6745	ERD10TJ103	10K	1	
R6746	EVNK6AA00B15	100K	1	
R6747	ERD10TJ105	1M	1	
R6748	ERD10TJ223	22K	1	
R6749	ERD10TJ563	56K	1	
R6750	EVLV3U00MB25	200K	1	
R6751	EVNK6AA00B15	100K	1	
R6752,6753	ERD10TJ104	100K	1	
R6754	ERD10TJ564	560K	1	
R6755	ERD10TJ563	56K	1	
R6756,6757	ERD10TJ104	100K	2	
R6758,6759	ERD10TJ563	56K	2	
R6760	ERD10TJ823	82K	1	
R6761	ERD10TJ104	100K	1	
R6762	ERD10TJ472	4.7K	1	
		Capacitors		
C6701	ECEA1CS100	Electrolytic 16V 10	1	
C6702	ECQM1H103KZ	Mylar 50V 0.01	1	
C6703	ECQM1H102KZ	Mylar 50V 0.001	1	
C6704	ECEA1CS470	Electrolytic 16V 47	1	
C6705	ECQV05104JZ	Mylar 50V 0.1	1	
C6706	ECEA50Z4R7	Electrolytic 50V 4.7	1	
C6707	ECEA50Z4R7	Electrolytic 50V 4.7	1	
C6708	ECQM1H682KZ	Mylar 50V 0.0068	1	
C6709	ECQM1H102KZ	Mylar 50V 0.001	1	
C6710	ECQM1H222KZ	Mylar 50V 0.0022	1	
C6711	ECQV05224JZ	Mylar 50V 0.22	1	
C6712	ECEA1CS100	Electrolytic 16V 10	1	
C6713	ECEA1HS220	Electrolytic 50V 22	1	
C6714	ECQM1H332KZ	Mylar 50V 0.0033	1	
C6715	ECQM1H472KZ	Mylar 50V 0.0047	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
C6716	ECQM1H332KZ	Mylar 50V 0.0033	1	
C6717	ECQM1H102KC	Mylar 50V 0.001	1	
		VIDEO COLOUR		
		PRINTED CIRCUIT BOARD		
		(Video Section)		
		Integrated Circuits		
IC3001	AN6310		1	
IC3002	SN76670N		1	
IC3003	AN6320N		1	
IC3004	AN6332		1	
IC3005	MN4069UB		1	
		Transistors		
Q3001,3002	2SD636		2	
Q3003	2SC2377		1	
Q3004	2SC2206		1	
Q3005	2SB641		1	
Q3006-3008	2SD638		3	
Q3009-3013	2SC2206		5	
Q3014,3015	2SD636		2	
Q3016	2SB641		1	
Q3017	2SC2206		1	
Q3018	2SB641		1	
Q3019-3023	2SC2206		5	
Q3028	2SD636		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Diodes		
D3001-3003	MA165		3	
D3004,3005	1SS16		2	
D3006	MA165		1	
D3023	MA165		1	
D3025	MA165		1	
		Resistors		
R3002,3003	ERD10TJ102	1K	2	
R3004	EVNK6AA00B53	Variable 5K	1	
R3005	ERD10TJ103	10K	1	
R3006	ERD10TJ334	330K	1	
R3007,3008	ERD10TJ332	3.3K	2	
R3009	ERD10TJ271	270	1	
R3010	ERD10TJ222	2.2K	1	
R3011	ERD10TJ102	1K	1	
R3012	EVNK6AA00B53	Variable 5K	1	
R3013	ERD10TJ102	1K	1	
R3014	ERD10TJ332	3.3K	1	
R3015	ERD10TJ562	5.6K	1	
R3016,3017	EVNK6AA00B53	Variable 5K	2	
R3018	ERD10TJ562	5.6K	1	
R3019	EVNK6AA00B23	Variable 2K	1	
R3020	ERD10TJ561	560	1	
R3021	ERD10TJ820	82	1	
R3022	ERD10TJ124	120K	1	
R3023	ERD10TJ471	470	1	
R3024	ERD10TJ473	47K	1	
R3025	ERD10TJ122	1.2K	1	
R3026	ERD10TJ682	6.8K	1	
R3027	ERD10TJ152	1.5K	1	
R3028	ERD10TJ122	1.2K	1	
R3029	ERD10TJ221	220	1	
R3030	ERD10TJ560	56	1	
R3031,3032	ERD10TJ682	6.8K	2	
R3033,3034	ERD10TJ560	56	2	
R3035	ERD10TJ152	1.5K	1	
R3036	ERG1ANJ680	1W 68	1	⚠
R3037	ERD10TJ102	1K	1	
R3038	ERD10TJ273	27K	1	
R3039	ERD10TJ153	15K	1	
R3040	ERD10TJ222	2.2K	1	
R3041	ERD10TJ273	27K	1	
R3042	ERD10TJ153	15K	1	
R3043	ERD10TJ102	1K	1	
R3044	ERD10TJ472	4.7K	1	
R3045	ERD10TJ332	3.3K	1	
R3046	ERD10TJ182	1.8K	1	
R3047	ERD10TJ152	1.5K	1	
R3048	ERD10TJ561	560	1	
R3049	ERD10TJ152	1.5K	1	
R3050	ERD10TJ331	330	1	
R3051	ERD10TJ152	1.5K	1	
R3052	ERD10TJ223	22K	1	
R3053	ERD10TJ823	82K	1	
R3054	EVNK6AA00B24	Variable 20K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R3055	ERD10TJ473	47K	1	
R3056	ERD10TJ562	5.6K	1	
R3057	ERD10TJ100	10	1	
R3058,3059	ERD10TJ272	2.7K	2	
R3060	ERD10TJ100	10	1	
R3061	ERD10TJ473	47K	1	
R3062	ERD10TJ391	390	1	
R3063	ERD10TJ822	8.2K	1	
R3064	ERD10TJ273	27K	1	
R3065	ERD10TJ822	8.2K	1	
R3066	ERD10TJ391	390	1	
R3067	ERD10TJ473	47K	1	
R3068-3070	ERD10TJ102	1K	3	
R3071	ERD25TJ331	330	1	
R3072	ERD10TJ101	100	1	
R3073	ERD10TJ474	470K	1	
R3074	ERD10TJ152	1.5K	1	
R3075	ERD10TJ102	1K	1	
R3076	ERD10TJ271	270	1	
R3077,3078	ERD10TJ102	1K	2	
R3079	ERD10TJ391	390	1	
R3080	ERD10TJ222	2.2K	1	
R3081	ERD10TJ153	15K	1	
R3082	ERD10TJ223	22K	1	
R3083	EVNK6AA00B24	Variable 20K	1	
R3084	ERD10TJ223	22K	1	
R3085,3086	ERD10TJ563	56K	2	
R3087	ERD10TJ151	150	1	
R3088	ERD10TJ562	5.6K	1	
R3089	ERD10TJ103	10K	1	
R3090	ERD10TJ561	560	1	
R3091	ERD10TJ681	680	1	
R3092	ERD10TJ102	1K	1	
R3093	ERD10TJ222	2.2K	1	
R3094	ERD10TJ392	3.9K	1	
R3095	ERD10TJ152	1.5K	1	
R3096	ERD10TJ222	2.2K	1	
R3097	ERD10TJ182	1.8K	1	
R3098	ERD10TJ821	820	1	
R3099	ERD10TJ472	4.7K	1	
R3100	ERD10TJ561	560	1	
R3101	ERD10TJ181	180	1	
R3102	ERD10TJ151	150	1	
R3103	EVNK6AA00B13	Variable 1K	1	
R3104	ERD10TJ333	33K	1	
R3105	ERD10TJ103	10K	1	
R3106	ERD10TJ271	270	1	
R3107	ERD10TJ122	1.2K	1	
R3109	ERD10TJ330	33	1	
R3310	ERD10TJ121	120	1	
R3111	ERD10TJ821	820	1	
R3112	ERD10TJ103	10K	1	
R3113	ERD10TJ102	1K	1	
R3114	ERD10TJ331	330	1	
R3115	ERD10TJ222	2.2K	1	
R3116	ERD10TJ331	330	1	
R3117	ERD10TJ271	270	1	
R3118	ERD10TJ183	18K	1	
R3119	ERD10TJ271	270	1	
R3120	ERD10TJ273	27K	1	
R3121	ERD10TJ102	1K	1	
R3122	ERD10TJ222	2.2K	1	
R3123	ERD10TJ102	1K	1	
R3124	ERD10TJ333	33K	1	
R3125	ERD10TJ562	5.6K	1	
R3126	ERD10TJ121	120	1	
R3127	ERD10TJ102	1K	1	
R3128	ERD10TJ471	470	1	
R3129	ERD10TJ332	3.3K	1	
R3130	ERD10TJ102	1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R3131	ERD10TJ680	68	1	
R3132	ERD10TJ391	390	1	
R3133	ERD10TJ681	680	1	
R3134,3135	ERD10TJ561	560	2	
R3136	ERD10TJ472	4.7K	1	
R3137	ERD10TJ272	2.7K	1	
R3138	EVNK6AA00B23	Variable 2K	1	
R3153	ERD10TJ122	1.2K	1	
R3154	ERD25TJ125	1.2M	1	
R3155	EVNK6AA00B54	Variable 50K	1	
R3156	ERD10TJ563	56K	1	
R3157	ERD10TJ822	8.2K	1	
R3158,3159	ERD10TJ682	6.8K	2	
R3160	ERD10TJ183	18K	1	
R3161	ERD10TJ332	3.3K	1	
R3162	ERD10TJ152	1.5K	1	
R3163,3164	ERD10TJ223	22K	2	
R3165	ERD10TJ750	75	1	
R3167	EVJ5LA008B15	Variable 100K	1	
R3168,3169	ERD10TJ750	75	2	
R3171	ERD10TJ821	820	1	
R3206,3207	EVNK6AA00B13	Variable 1K	2	
R3208	EVNK6AA00B23	Variable 2K	1	
R3209	ERD10TJ102	1K	1	
		Capacitors		
C3001	ECCD1H390K	Ceramic 50V 39P	1	
C3002	ECEA0JS470	Electrolytic 6.3V 47	1	
C3003	VCY25473KX	Semiconductor 25V 0.047	1	
C3004	ECEA1AS470	Electrolytic 10V 47	1	
C3005	ECCD1H180KC	Ceramic 50V 18P	1	
C3006	ECEA0JN470S	Electrolytic 6.3V 47	1	
C3007	ECEA1AS101	Electrolytic 10V 100	1	
C3008	ECEA1ES4R7	Electrolytic 25V 4.7	1	
C3009	ECEA0JS221	Electrolytic 6.3V 220	1	
C3010	VCY25333KX	Semiconductor 25V 0.033	1	
C3011	VCKD1H621JS	Ceramic 50V 620P	1	
C3012	ECCD1H270KC	Ceramic 50V 27P	1	
C3013	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3014	ECEA1AS470	Electrolytic 10V 47	1	
C3015	ECEA1CS221	Electrolytic 16V 220	1	
C3016	ECEA0JN470	Electrolytic 6.3V 47	1	
C3017	ECEA1CS470	Electrolytic 16V 47	1	
C3018	ECEA1ES4R7	Electrolytic 25V 4.7	1	
C3019	ECCD1H560KC	Ceramic 50V 56P	1	
C3020	ECV1ZW50X44	Trimmer 50P	1	
C3021,3022	ECKD1H103ZF	Ceramic 50V 0.01	2	
C3023	ECEA0JS470	Electrolytic 6.3V 47	1	
C3024	ECCD1H820KC	Ceramic 50V 82P	1	
C3025	ECKD1H181KB	Ceramic 50V 180P	1	
C3026	ECKD1H391KB	Ceramic 50V 390P	1	
C3027	ECEA1CS100	Electrolytic 16V 10	1	
C3028	ECKD1H331KB	Ceramic 50V 330P	1	
C3029,3030	ECKD1H103ZF	Ceramic 50V 0.01	2	
C3031	ECQV05104JZ	Mylar 50V 0.1	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
C3032	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3033	ECEA1CS470	Electrolytic 16V 47	1	
C3034	ECEA1HS010	Electrolytic 50V 1	1	
C3035,3036	ECKD1H103ZF	Ceramic 50V 0.01	2	
C3037,3038	ECV1ZW50X44	Trimmer 50P	2	
C3039	ECEA1HS010	Electrolytic 50V 1	1	
C3040	ECEA1CS100	Electrolytic 16V 10	1	
C3041	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3042	ECCD1H470KC	Ceramic 50V 47P	1	
C3043	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3044	ECCD1H470KC	Ceramic 50V 47P	1	
C3045	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3046	ECCD1H180KC	Ceramic 50V 18P	1	
C3047	VCY25153KX	Semiconductor 25V 0.015	1	
C3048	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3049	ECEA1AS221	Electrolytic 10V 220	1	
C3050,3051	ECKD1H121KB	Ceramic 50V 120P	2	
C3052,3053	ECKD1H103ZF	Ceramic 50V 0.01	2	
C3054	ECQM1H473KZ	Mylar 50V 0.047	1	
C3055	ECEA1CS470	Electrolytic 16V 47	1	
C3056	ECEA0JS471	Electrolytic 6.3V 470	1	
C3057	ECEA1HS010	Electrolytic 50V 1	1	
C3058	ECEA1CS221	Electrolytic 16V 220	1	
C3059	ECEA0JS470	Electrolytic 6.3V 47	1	
C3060	VCY25182KX	Semiconductor 25V 0.0018	1	
C3061	ECKD1H101KB	Ceramic 50V 100P	1	
C3062	ECKD1H391KB	Ceramic 50V 390P	1	
C3063	ECEA0JS470	Electrolytic 6.3V 47	1	
C3064-3066	ECKD1H103ZF	Ceramic 50V 0.01	3	
C3067	ECKD1H271KB	Ceramic 50V 270P	1	
C3068	ECEA1CS100	Electrolytic 16V 10	1	
C3069	ECCD1H270K	Ceramic 50V 27P	1	
C3070,3071	ECEA0JS470	Electrolytic 6.3V 47	2	
C3072	ECKD1H151KB	Ceramic 50V 150P	1	
C3073	ECKD1H221KB	Ceramic 50V 220P	1	
C3074	ECEA0JS470	Electrolytic 6.3V 47	1	
C3075	ECEA1CS470	Electrolytic 16V 47	1	
C3076	ECCD1H680K	Ceramic 50V 68P	1	
C3077	ECEA1CS100	Electrolytic 16V 10	1	
C3078	ECCD1H220K	Ceramic 50V 22P	1	
C3079	ECEA1CS221	Electrolytic 16V 220	1	
C3080	ECCD1H560KC	Ceramic 50V 56P	1	
C3081	VCKD1H471JS	Ceramic 50V 470P	1	
C3082	VCKD1H182JS	Ceramic 50V 0.0018	1	
C3083	ECEA1CS100	Electrolytic 16V 10	1	
C3084	ECEA1CN100	Electrolytic 16V 10	1	
C3086,3087	ECKD1H103ZF	Ceramic 50V 0.01	2	
C3088,3089	ECCD1H270K	Ceramic 50V 27P	2	
C3090	ECCD1H330K	Ceramic 50V 33P	1	
C3091,3092	ECKD1H103ZF	Ceramic 50V 0.01	2	
C3093	ECCD1H390K	Ceramic 50V 39P	1	
C3094	ECCD1H820K	Ceramic 50V 82P	1	
C3095	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3096	VCKD1H431JS	Ceramic 50V 430P	1	
C3098	ECKD1H391KB	Ceramic 50V 390P	1	
C3099	ECKD1H151KB	Ceramic 50V 150P	1	
C3100	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3104	ECEA1CS100	Electrolytic 16V 10	1	
C3105	ECCD1H221KC	Ceramic 50V 220P	1	
C3106	ECKD1H561KB	Ceramic 50V 560P	1	
C3107	ECKD1H561KB	Ceramic 50V 560P	1	
C3108	ECEA1HS010	Electrolytic 50V 1	1	
C3109	ECEA1CS100	Electrolytic 16V 10	1	
C3111	ECCD1H330K	Ceramic 50V 33P	1	
C3112,3113	ECCD1H103ZF	Ceramic 50V 0.01	2	
C3114	ECEA1CS470	Electrolytic 16V 47	1	
C3115,3116	ECEA1CS100	Electrolytic 16V 10	2	
C3118	VCY25473KX	Semiconductor 25V 0.047	1	
C3120	ECKD1H103ZF	Ceramic 50V 0.01	1	
C3121	ECKF1H101K	Ceramic 50V 100	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Coils		
L3001	VLQEL06R680K	68μH	1	
L3002	VLQ80R221K	220μH	1	
L3003	VLQEL06R820K	82μH	1	
L3004	VLQEL06R151K	150μH	1	
L3005	VLQEL06R270K	27μH	1	
L3006	VLQEL06R1R2K	1.2μH	1	
L3007-3009	VLQ80R221K	220μH	3	
L3010	VLQEL06R3R3K	3.3μH	1	
L3011	VLQEL06R220K	22μH	1	
L3012	VLQEL06R3R3K	3.3μH	1	
L3013	VLQEL06R220K	22μH	1	
L3014	VLQEL06R330K	33μH	1	
L3015	VLQEL06F471K	470μH	1	
L3016	VLQEL06F471K	470μH	1	
L3017	VLQEL06F471K	470μH	1	
L3018	VLQEL06R100K	10μH	1	
L3019	VLQ80R221K	220μH	1	
L3020	VLQEL06R180K	18μH	1	
L3022	VLQEL06R2R7K	2.7μH	1	
L3023	VLQEL06R180K	18μH	1	
L3025	VLQEL06R100K	10μH	1	
L3026	VLQEL06R151K	150μH	1	
L3027	VLQEL06R560K	56μH	1	
L3028	VLQEL06R100K	10μH	1	
L3029	VLQ80R221K	220μH	1	
L3030	VLQEL06F151K	150μH	1	
		Filters		
FL3001	VLF0112A		1	
FL3002	VLF0115		1	
FL3003	VLF0083		1	
FL3004	VLF0155		1	
		Connectors		
P3002	VJP1144	5P	1	
P3003	VJP1143	5P	1	
P3004	VJP1144		1	
P3005	VJP1143		1	
P3007	VJP1144		1	
		Switch		
S3001	VSS0052	Slide Switch	1	
		Delay Line		
DL3001	VLD0012	2H	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		VIDEO COLOUR		
		PRINTED CIRCUIT BOARD		
		(Colour Section)		
		Integrated Circuits		
IC8001	AN6360		1	
IC8002	AN6552		1	NV-7200-EG only
IC8003	AN6363		1	
IC8004	AN6371		1	
IC8005	AN6353		1	
		Transistors		
Q8001	2SD636		1	
Q8002	2SC2206		1	NV-7200-EG only
Q8003	2SD636		1	
Q8004	2SC2206		1	
Q8005	2SC2206		1	NV-7200-EG only
Q8006	2SB641		1	
Q8007	2SD636		1	NV-7200-EG only
Q8008	2SD889			
Q8009	2SC2206		1	NV-7200-EG only
Q8010	2SC2206		1	NV-7200-EG only
Q8011	2SC2206		1	NV-7200-EG only
		Diodes		
D8001	MA165		1	
D8002-8004	MA165		3	NV-7200-EG only
D8005,8006	MA165		2	
D8007-8010	MA165		4	NV-7200-EG only
D8011	MA165		1	
		Resistors		
R8001	ERD10TJ102	1K	1	
R8002	ERD10TJ563	56K	1	
R8003	ERD10TJ102	1K	1	
R8004	ERD10TJ103	10K	1	
R8005	ERD10TJ331	330	1	
R8006	ERD10TJ122	1.2K	1	
R8007	ERD10TJ181	180	1	NV-7200-EG only
R8008	ERD10TJ822	8.2K	1	NV-7200-EG only
R8009	ERD10TJ272	2.7K	1	NV-7200-EG only
R8010	ERD10TJ562	5.6K	1	
R8011,8012	ERD10TJ102	1K	2	
R8013,8014	ERD10TJ122	1.2K	1	
R8015	ERD10TJ821	820	1	
R8016	ERD10TJ122	1.2K	1	
R8017	ERD10TJ684	680K	1	
R8019	ERD10TJ153	15K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R8020	ERD10TJ223	22K	1	NV-7200-EG only
R8021	EVNK6AA00B14	Variable 10K	1	
R8022	ERD10TJ391	390	1	
R8023	ERD10TJ153	15K	1	
R8024,8025	ERD10TJ391	390	2	
R8026	ERD10TJ273	27K	1	
R8027,8028	ERD10TJ391	390	2	
R8029	ERD10TJ562	5.6K	1	
R8030	ERD10TJ103	10K	1	NV-7200-EG only
R8031	ERD10TJ152	1.5K	1	NV-7200-EG only
R8032	ERD10TJ102	1K	1	NV-7200-EG only
R8033	ERD10TJ272	2.7K	1	NV-7200-EG only
R8034	ERD10TJ471	470	1	NV-7200-EG only
R8035	ERD10TJ680	68	1	NV-7200-EG only
R8036	ERD10TJ224	220K	1	
R8037	ERD10TJ273	27K	1	
R8038	ERG12ANJ391	390	1	
R8039	ERD10TJ392	3.9K	1	NV-7200-EG only
R8040	ERD10TJ682	6.8K	1	NV-7200-EG only
R8041	ERD10TJ182	1.8K	1	
R8042	ERD10TJ102	1K	1	
R8043	EVNK6AA00B24	Variable 20K	1	NV-7200-EG only
R8044	ERD10TJ104	100K	1	NV-7200-EG only
R8045	ERD10TJ223	22K	1	NV-7200-EG only
R8046	ERD10TJ682	6.8K	1	NV-7200-EG only
R8047	ERD10TJ123	12K	1	NV-7200-EG only
R8048	ERD10TJ152	1.5K	1	NV-7200-EG only
R8049	ERD10TJ273	27K	1	NV-7200-EG only
R8050	ERD10TJ331	330	1	NV-7200-EG only
R8051	ERD10TJ102	1K	1	NV-7200-EG only
R8052	ERD10TJ271	270	1	NV-7200-EG only
R8053	ERD10TJ471	470	1	NV-7200-EG only
R8054	ERD10TJ682	6.8K	1	NV-7200-EG only
R8055	ERD10TJ102	1K	1	NV-7200-EG only
R8056	ERD10TJ682	6.8K	1	
R8057	ERD10TJ222	2.2K	1	
R8059	EVNK6AA00B52	Variable 500	1	
R8061,8062	ERD10TJ103	10K	2	
R8063	ERD10TJ562	5.6K	1	
R8064	ERD10TJ102	1K	1	
R8065	ERD10TJ123	12K	1	
R8066	ERD10TJ562	5.6K	1	
R8067	ERD10TJ153	15K	1	
R8068	ERD10TJ102	1K	1	
R8069	ERD10TJ222	2.2K	1	
R8070	ERD25TJ225	2.2M	1	
R8071	ERD10TJ274	270K	1	
R8072	ERD10TJ182	1.8K	1	
R8073	ERD10TJ471	470	1	
R8074	ERD10TJ122	1.2K	1	
R8075	ERD10TJ472	4.7K	1	
R8076	ERD10TJ103	10K	1	
R8077	ERD10TJ392	3.9K	1	
R8078	ERD10TJ151	150	1	
R8079,8080	EVNK6AA00B23	Variable 2K	2	
R8081,8082	ERD10TJ102	1K	2	
R8083	ERD10TJ473	47K	1	
R8084	ERD10TJ274	270K	1	
R8085	ERD10TJ102	1K	1	
R8086	ERD10TJ222	2.2K	1	NV-7200-EG only

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Capacitors		
C8001	ECKD1H103ZF	Ceramic 50V 0.01	1	
C8002	ECKD1H102KB	Ceramic 50V 0.001	1	NV-7200-EG only
C8003-8005	ECKD1H103ZF	Ceramic 50V 0.01	3	
C8006	ECEA1CS221	Electrolytic 16V 220	1	
C8007	ECEA1HS010	Electrolytic 50V 1	1	
C8008	ECKD1H331KB	Ceramic 50V 330P	1	
C8009	ECKD1H103ZF	Ceramic 50V 0.01	1	
C8010,8011	ECKD1H103ZF	Ceramic 50V 0.01	2	
C8012	ECEA1CS100	Electrolytic 16V 10	1	
C8013,8014	ECKD1H103ZF	Ceramic 50V 0.01	2	
C8015	ECCD1H390KC	Ceramic 50V 39P	1	
C8016,8017	ECKD1H102KB	Ceramic 50V 0.001	2	NV-7200-EG only
C8018	ECQM1H153KZ	Mylar 50V 0.015	1	NV-7200-EG only
C8019	ECKD1H561KB	Ceramic 50V 560P	1	
C8020	ECEA1CS100	Electrolytic 16V 10	1	
C8021	ECKD1H122KB	Ceramic 50V 0.0012	1	
C8022	ECEA1HS010	Electrolytic 50V 1	1	
C8023-8025	ECKD1H103ZF	Ceramic 50V 0.01	3	
C8026	ECEA1HS2R2	Electrolytic 50V 2.2	1	NV-7200-EG only
C8027	ECEA1CS100	Electrolytic 16V 10	1	NV-7200-EG only
C8028	ECKD1H103ZF	Ceramic 50V 0.01	1	NV-7200-EG only
C8029	ECEA16Z47	Electrolytic 16V 47	1	NV-7200-EG only
C8030	ECKD1H102KB	Ceramic 50V 0.001	1	NV-7200-EG only
C8031	ECKD1H103ZF	Ceramic 50V 0.01	1	NV-7200-EG only
C8032	ECKD1H102KB	Ceramic 50V 0.001	1	NV-7200-EG only
C8033	ECCD1H100FC	Ceramic 50V 10P	1	NV-7200-EG only
C8034	ECKD1H821KB	Ceramic 50V 820P	1	
C8035	ECEA1CS100	Electrolytic 16V 10	1	
C8036	ECQM1H183KZ	Mylar 50V 0.018	1	
C8037	ECCD1H121KC	Ceramic 50V 120P	1	
C8038	ECCD1H181KC	Ceramic 50V 180P	1	
C8039	ECEA1CS330	Electrolytic 16V 33	1	
C8040	ECEA1CS330	Electrolytic 16V 33	1	
C8041	ECKD1H103ZF	Ceramic 50V 0.01	1	
C8042	ECEA1HS010	Electrolytic 50V 1	1	
C8043	ECQV05104JZ	Mylar 50V 0.1	1	
C8044	ECQM1H563KZ	Mylar 50V 0.056	1	
C8045	ECKD1H102KB	Ceramic 50V 0.001	1	
C8046	ECKD1H821KB	Ceramic 50V 820P	1	
C8047,8048	ECKD1H103ZF	Ceramic 50V 0.01	2	
C8049	ECCD1H150KC	Ceramic 50V 15P	1	
C8050	ECEA1HS2R2	Electrolytic 50V 2.2	1	
C8051	ECKD1H101KB	Ceramic 50V 100P	1	
C8052	ECQM1H333KZ	Mylar 50V 0.033	1	
C8053	ECEA1CS100	Electrolytic 16V 10	1	
C8054	ECCD1H040DC	Ceramic 50V 4P	1	
C8055	ECCD1H060DC	Ceramic 50V 6P	1	
C8056	ECEA1CS330	Electrolytic 16V 33	1	
C8057	ECEA1CS100	Electrolytic 16V 10	1	
C8053	ECCD1H121KC	Ceramic 50V 120P	1	
C8059	ECCD1H101KC	Ceramic 50V 100P	1	
C8060	ECV1ZW20X44	Trimmer 20P	1	
C8061	ECCD1H100FC	Ceramic 50V 10P	1	
C8062	ECKD1H103ZF	Ceramic 50V 0.01	1	
C8063	ECEA1CS100	Electrolytic 16V 10	1	
C8064	ECV1ZW40X44	Trimmer 40P	1	
C8065,8066	ECKD1H103ZF	Ceramit 50V 0.01	2	
C8067	ECKD1H221KB	Ceramic 50V 220P	1	
C8068,8069	ECKD1H103ZF	Ceramic 50V 0.01	2	
C8070	ECQM1H473JZ	Mylar 50V 0.047	1	NV-7200-EG only
C8071	ECQM1H332JC	Mylar 50V 0.0033	1	NV-7200-EG only

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Coils		
L8001	VLQ80R221K	220μH	1	
L8002	VLQEL06R6R8K	6.8μH	1	
L8003	VLQEL06R330K	33μH	1	
L8004	VLQ02F682K	6.8mH	1	
L8005	VLQEL06R470K	47μH	1	
L8006	VLQ02F822J	8.2mH	1	NV-7200-EG only
L8007	VLQEL06R101K	100μH	1	
L8008	VLQEL06R560K	56μH	1	
L8009	VLQ80R221K	220μH	1	
L8010	VLQ80R221K	220μH	1	
L8011	VLQ80R221K	220μH	1	
L8012	VLQEL06R6R8K	6.8μH	1	
L8013	VLQ80R221K	220μH	1	
L8014	VLQ80R221K	220μH	1	
		Filters		
FL8001	VLF0085		1	
FL8002	VLF0113		1	
FL8003	VLF0090		1	
FL8004	VLF0094		1	
FL8005	VLF0095		1	
FL8006	VLF0143		1	NV-7200-EG only
		Crystals		
X8001	VSX0066		1	
X8002	VSX0068		1	
		Delay Line		
DL8001	VLD0014		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		AUDIO PRINTED CIRCUIT BOARD		
		Integrated Circuits		
IC4001	HA12005		1	
IC4002	NE646N		1	
		Transistors		
Q4001,4002	2SD958		2	
Q4003	2SB788		1	
Q4004,4005	2SD636		2	
Q4006	2SD638		1	
Q4007,4008	2SD636		2	
Q4009	2SB641		1	
Q4010,4011	2SD636		2	
Q4012	2SB641		1	
Q4013-4015	2SD636		3	
Q4016	2SD638		1	
Q4017	2SD639		1	
Q4019	2SA719		1	
Q4020	2SD639		1	
Q4021	2SD636		1	
Q4022	2SB641		1	
Q4023	2SD655		1	
Q4025	2SB745		1	
Q4026	2SD636		1	
		Diodes		
D4001-4005	MA165		5	
D4008,4009	MA165		2	
D4010	RD3.0EB		1	
D4011,4012	MA165		2	
		Resistors		
R4001	ERD25TJ472	4.7K	1	
R4002,4003	ERD25TJ104	100K	2	
R4004	ERD25TJ332	3.3K	1	
R4005	ERD25TJ221	220	1	
R4007	ERD10TJ472	4.7K	1	
R4009	ERD10TJ682	6.8K	1	
R4010	ERD10TJ473	47K	1	
R4012	ERD10TJ272	2.7K	1	
R4013	ERD25TJ104	100K	1	
R4014	ERD25TJ333	33K	1	
R4015	ERD25TJ104	100K	1	
R4016	ERD25TJ331	330	1	
R4017	ERD10TJ101	100	1	
R4018	ERD25TJ104	100K	L	
R4019	ERD25TJ332	3.3K	1	
R4020	ERD10TJ182	1.8K	1	
R4021	EVNK6AA00B24	Variable 20K	1	
R4022	ERD10TJ222	2.2K	1	
R4023	ERD10TJ103	10K	1	
R4024	ERD10TJ822	8.2K	1	
R4025-4028	ERD10TJ223	22K	4	
R4029	ERD10TJ104	100K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R4030	ERD10TJ561	560	1	
R4031	ERD10TJ123	12K	1	
R4032	ERD10TJ183	18K	1	
R4033	ERD10TJ102	1K	1	
R4034,4035	ERD10TJ472	4.7K	2	
R4036	ERD10TJ824	820K	1	
R4037	ERD10TJ104	100K	1	
R4039	ERD10TJ332	3.3K	1	
R4040	ERD10TJ473	47K	1	
R4041	ERD10TJ181	180	1	
R4043	EVNK6AA00B24	Variable 20K	1	
R4044	ERD10TJ274	270K	1	
R4045	ERD10TJ184	180K	1	
R4046,4047	ERD10TJ102	1K	2	
R4048	ERD10TJ223	22K	1	
R4049	ERD10TJ223	22K	1	
R4050	ERD10TJ392	3.9K	1	
R4051	ERD25TJ821	820	1	
R4052	ERD10TJ332	3.3K	1	
R4053	ERD10TJ123	12K	1	
R4054,4055	ERD10TJ223	22K	2	
R4056	ERD10TJ103	10K	1	
R4057	ERD10TJ153	15K	1	
R4058	ERD10TJ184	180K	1	
R4059	ERD10TJ823	82K	1	
R4060	ERD10TJ151	150	1	
R4061	ERD10TJ472	4.7K	1	
R4062	ERD10TJ470	47	1	
R4063	ERD10TJ103	10K	1	
R4064	ERD10TJ102	1K	1	
R4065	ERD10TJ333	33K	1	
R4066	ERD10TJ473	47K	1	
R4067	ERD10TJ153	15K	1	
R4068	ERD10TJ182	1.8K	1	
R4069,4070	ERD10TJ223	22K	2	
R4071	ERD10TJ103	10K	1	
R4072	ERD10TJ223	22K	1	
R4073	ERD10TJ472	4.7K	1	
R4074	ERD10TJ103	10K	1	
R4075	ERD10TJ223	22K	1	
R4076	ERD10TJ4R7	4.7	1	
R4077	ERD10TJ333	33K	1	
R4078	EVNK6AA00B54	Variable 50K	1	
R4079	ERD10TJ682	6.8K	1	
R4080	ERD10TJ4R7	4.7	1	
R4081	ERD10TJ333	33K	1	
R4082	ERD10TJ473	47K	1	
R4083	ERD10TJ181	180	1	
R4084	ERD10TJ104	100K	1	
R4085	ERD10TJ103	10K	1	
R4086,4087	ERD10TJ223	22K	2	
R4093	ERD10TJ182	1.8K	1	
R4094	ERD10TJ472	4.7K	1	
R4095	ERD10TJ473	47K	1	
R4096	ERD25TJ333	33K	1	
R4097	ERD10TJ472	4.7K	1	
R4098	ERD10TJ473	47K	1	
R4099	ERD10TJ823	82K	1	
R4101	ERD10TJ274	270K	1	
R4102	ERD10TJ472	4.7K	1	
R4104	ERD10TJ682	6.8K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Capacitors		
C4002	ECEA1HS010	Electrolytic 50V 1	1	
C4004	ECEA0JS470	Electrolytic 6.3V 47	1	
C4008	ECEA1HS010	Electrolytic 50V 1	1	
C4009	ECEA1AS330	Electrolytic 10V 33	1	
C4010	ECKD1H102KB	Ceramic 50V 0.001	1	
C4011	ECEA1CS100	Electrolytic 16V 10	1	
C4012	ECKD1H681KB	Ceramic 50V 680P	1	
C4013	ECEA1CS100	Electrolytic 16V 10	1	
C4014	ECKD1H102KB	Ceramic 50V 0.001	1	
C4015	ECQM1H333JZ	Mylar 50V 0.003	1	
C4016	ECEA1AS330	Electrolytic 10V 33	1	
C4017	ECQM1H333JZ	Mylar 50V 0.033	1	
C4018	ECKD1H102KB	Ceramic 50V 0.001	1	
C4019	ECEA1CS100	Electrolytic 16V 10	1	
C4020	ECKD1H102KB	Ceramic 50V 0.001	1	
C4021,4022	ECEA1CS100	Electrolytic 16V 10	2	
C4023	ECQV05124JZ	Mylar 50V 0.12	1	
C4024	ECEA1CS100	Electrolytic 16V 10	1	
C4025	VCY25333KX	Semiconductor 25V 0.033	1	
C4026	ECEA1CS100	Electrolytic 16V 10	1	
C4027	ECEA0JS101	Electrolytic 6.3V 100	1	
C4028	ECEA1HS010	Electrolytic 50V 1	1	
C4029	ECKD1H102KB	Ceramic 50V 0.001	1	
C4030	ECQM1H822JZ	Mylar 50V 0.0082	1	
C4031	ECQM1H273JZ	Mylar 50V 0.027	1	
C4032	ECQM1H472JZ	Mylar 50V 0.0047	1	
C4033,4034	ECEA1CS100	Electrolytic 16V 10	2	
C4036	ECQM1H473JZ	Mylar 50V 0.047	1	
C4037	ECEA1CS100	Electrolytic 16V 10	1	
C4038	ECQV05104JZ	Mylar 50V 0.1	1	
C4039	ECQV05334JZ	Mylar 50V 0.33	1	
C4040	ECQM1H562JZ	Mylar 50V 0.0056	1	
C4042	ECEA1CS221	Electrolytic 16V 220	1	
C4043	ECEA1AS221	Electrolytic 10V 220	1	
C4044	ECEA1CS100	Electrolytic 16V 10	1	
C4045	ECEA1AS470	Electrolytic 10V 47	1	
C4046	ECQV05124JZ	Mylar 50V 0.12	1	
C4047	ECEA1HNR47S	Electrolytic 50V 0.47	1	
C4048	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C4050	ECKD1H103ZF	Ceramic 50V 0.01	1	
C4051	VCY25333KX	Semiconductor 25V 0.033	1	
C4052	ECQM2223KZ	Mylar 200V 0.022	1	
C4053	ECEA0JS101	Electrolytic 6.3V 100	1	
C4054	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C4055	ECKD1H103ZF	Ceramic 50V 0.01	1	
C4056	VCY25333KX	Semiconductor 25V 0.033	1	
C4057	ECCD2H680K	Ceramic 100V 68P	1	
C4058	ECQF6152KZ	Polypropylene630V 0.0015	1	
C4059	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C4060	ECEA1CS470	Electrolytic 16V 47	1	
C4063	ECEA1CS221	Electrolytic 16V 220	1	
C4064	ECEA1CS101	Electrolytic 16V 100	1	
C4067	ECEA1HN010	Electrolytic 50V 1	1	
C4068,4069	ECEA0JS470	Electrolytic 6.3V 47	2	
C4070	ECEA1CS470	Electrolytic 16V 47	1	
C4071	ECEA1CS100	Electrolytic 16V 47	1	
C4072	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C4073	ECEA1AS101	Electrolytic 10V 100	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Coils		
L4001	VLQ00F222K	2.2mH	1	
L4002	VLQ80W102K	1mH	1	
		Filters		
FL4001	VLF0116		1	
		Transformer		
T4001	VLT0118		1	
T4002	VLT0116		1	
		Connectors		
P4001	VJP1143		1	
P4002	VJP1141	2P	1	
P4003	VJP1141		1	
P4004	VJP1142	3P	1	
P4005	VJP1141		1	
		SYSTEM CONTROL CIRCUIT BOARD ASSEMBLY		
		Integrated Circuits		
IC6001	MN1405VKA			
IC6002	MN1201A			
IC6003	μPD4503BC			
IC6004	μPD4049UBC			
IC6005	μPC339C			
IC6006	μPD4081BC			
IC6007	HD7416P			
IC6008	STA301			
IC6009	BA6109			
		Transistors		
Q6001	2SA719		1	
Q6002	2SD636		1	
Q6003	2SB561		1	
Q6004	2SB641		1	
Q6005	2SB561		1	
Q6006,6007	2SD636		2	
Q6008	2SA719		1	
Q6009	2SD636		1	
Q6010	2SB641		1	
Q6011	2SD636		1	
Q6013-6024	2SD636		12	
Q6025	2SD638		1	
Q6026	2SD639		1	
Q6027	2SA768F		1	
Q6028	2SD636		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
Q6029	2SB641		1	
Q6030-6039	2SD636		10	
Q6040	2SB641		1	
Q6041	2SA768F		1	
Q6042	2SD636		1	
Q6043	2SD973		1	
Q6044,6045	2SB793		2	
Q6046	2SD973		1	
Q6047,6048	2SD636		2	
		Diodes		
D6001-6004	MA165		4	
D6006-6015	MA165		10	
D6018,6019	MA165		2	
D6022-6030	MA165		9	
D6031-6035	10E1		5	
D6036-6041	MA165		6	
D6048	MA165		1	
D6051-6073	MA165		23	
D6074-6076	10E1		3	
		Resistors		
R6001	ERD10TJ152	1.5K	1	
R6002,6003	ERD10TJ103	10K	2	
R6004	ERD10TJ153	15K	1	
R6005	ERD10TJ223	22K	1	
R6006	ERD10TJ152	1.5K	1	
R6007	ERD10TJ103	10K	1	
R6008,6009	ERD10TJ333	33K	2	
R6010	ERD10TJ152	1.5K	1	
R6011	ERD10TJ103	10K	1	
R6012	ERD10TJ183	18K	1	
R6013	ERD10TJ223	22K	1	
R6014	ERD10TJ273	27K	1	
R6015,6016	ERD10TJ223	22K	2	
R6017	ERD10TJ152	1.5K	1	
R6018	ERD10TJ103	10K	1	
R6019,6020	ERD10TJ223	22K	2	
R6021	ERD10TJ333	33K	1	
R6022,6023	ERD10TJ103	10K	2	
R6024	ERD10TJ224	220K	1	
R6025	ERD10TJ474	470K	1	
R6026	ERD10TJ224	220K	1	
R6031	ERD10TJ224	220K	1	
R6032,6033	ERD10TJ334	330K	2	
R6034	ERD10TJ563	56K	1	
R6035	ERD10TJ104	100K	1	
R6036	ERD10TJ152	1.5K	1	
R6037	ERD10TJ104	100K	1	
R6039	ERD10TJ104	100K	1	
R6041	ERD10TJ334	330K	1	
R6042	ERD10TJ224	220K	1	
R6043,6044	ERD10TJ223	22K	2	
R6045	ERD10TJ682	6.8K	1	
R6047,6048	ERD10TJ563	56K	2	
R6049	ERD10TJ103	10K	1	
R6050,6051	ERD10TJ333	33K	2	
R6052	ERD10TJ272	2.7K	1	
R6053	ERD10TJ223	22K	1	
R6054,6055	ERD10TJ103	10K	2	
R6056	ERD10TJ152	1.5K	1	
R6057	ERD10TJ272	2.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R6058	ERD10TJ103	10K	1	
R6060	ERD10TJ472	4.7K	1	
R6061	ERD10TJ562	5.6K	1	
R6062	ERD10TJ103	10K	1	
R6063,6064	ERD10TJ124	120K	2	
R6065	ERD10TJ103	10K	1	
R6066	ERD10TJ102	1K	1	
R6067	ERD10TJ333	33K	1	
R6068	ERD10TJ223	22K	1	
R6069	ERD10TJ224	220K	1	
R6070	ERD10TJ562	5.6K	1	
R6071	ERD10TJ122	1.2K	1	
R6072	ERD10TJ103	10K	1	
R6073	ERD10TJ562	5.6K	1	
R6074	ERD10TJ122	1.2K	1	
R6075	ERD10TJ103	10K	1	
R6076	ERD10TJ562	5.6K	1	
R6077	ERD10TJ122	1.2K	1	
R6078	ERD10TJ103	10K	1	
R6079-6081	ERD10TJ101	100	3	
R6082	ERD10TJ183	18K	1	
R6083	ERQ14AJ2R2	1/4W 2.2	1	
R6084	ERD10TJ123	12K	1	⚠
R6085	ERD10TJ332	3.3K	1	
R6086	ERD25TJ221	1/4W 220	1	
R6087	ERG12ANJ101	1/2W 100	1	
R6088	ERD10TJ104	100K	1	
R6089	ERD10TJ103	10K	1	
R6090	ERD10TJ104	100K	1	
R6091	ERD10TJ333	33K	1	
R6092	ERD10TJ223	22K	1	
R6093	ERD10TJ222	2.2K	1	
R6094	ERD10TJ223	22K	1	
R6095,6096	ERD10TJ563	56K	2	
R6097	ERD10TJ154	150K	1	
R6098	ERD10TJ223	22K	1	
R6099	ERD10TJ272	2.7K	1	
R6100	ERD10TJ821	820	1	
R6101	ERD10TJ103	10K	1	
R6102	ERD10TJ124	120K	1	
R6103	ERD10TJ823	82K	1	
R6105	ERD10TJ103	10K	1	
R6106	ERD10TJ223	22K	1	
R6109	ERD10TJ224	220K	1	
R6113	ERD10TJ153	15K	1	
R6114	ERD10TJ333	33K	1	
R6115	ERD10TJ103	10K	1	
R6116	ERD10TJ332	3.3K	1	
R6117,6118	ERD10TJ563	56K	2	
R6119	ERG1ANJ820	1W 82	1	
R6120	ERD10TJ334	330K	1	
R6121-6123	ERD10TJ333	33K	3	
R6124	ERD10TJ103	10K	1	
R6125	ERD10TJ334	330K	1	
R6126,6127	ERD10TJ333	33K	2	
R6128,6129	ERD10TJ563	56K	2	
R6130	ERD10TJ103	10K	1	
R6131	ERD10TJ682	6.8K	1	
R6132,6133	ERD10TJ103	10K	2	
R6134	ERD10TJ124	120K	1	
R6135	ERD10TJ152	1.5K	1	
R6136	ERD10TJ332	3.3K	1	
R6137	ERD10TJ105	1M	1	
R6138	ERD10TJ474	470K	1	
R6139	ERD10TJ153	15K	1	
R6140	ERD10TJ123	12K	1	
R6141	ERD10TJ224	220K	1	
R6142	ERD10TJ561	560	1	
R6143	ERD10TJ221	220	1	
R6144	ERD10TJ152	1.5K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R6145	ERD10TJ333	33K	1	
R6146	ERD10TJ103	10K	1	
R6147,6148	ERD10TJ333	33K	2	
R6149	ERD10TJ821	820	1	
R6150	ERD10TJ102	1K	1	
R6151	ERD10TJ152	1.5K	1	
R6152	ERD10TJ333	33K	1	
R6153	ERD10TJ102	1K	1	
R6154	ERD10TJ153	15K	1	
R6155	ERD10TJ333	33K	1	
R6156	ERD10TJ153	15K	1	
R6157	ERD10TJ561	560	1	
R6158,6159	ERD10TJ563	56K	2	
R6160	ERD10TJ562	5.6K	1	
R6161	ERD10TJ223	22K	1	
R6162,6163	ERD10TJ392	3.9K	2	
R6164	ERD10TJ183	18K	1	
R6165	ERD25TJ681	1/4W 680	1	
R6166-6168	ERD10TJ103	10K	3	
R6169	ERD10TJ122	1.2K	1	
R6170,6171	ERD10TJ183	18K	2	
R6172	ERD10TJ562	5.6K	1	
R6173	ERX1ANJ3R3	1W 3.3	1	
R6174	ERD10TJ123	12K	1	
R6175	ERD10TJ273	27K	1	
R6176	ERD10TJ103	10K	1	
R6177	ERD10TJ223	22K	1	
R6178,6179	ERD10TJ102	1K	2	
R6180,6181	ERD50TJ471	1/2W 470	2	
R6182,6183	ERD10TJ102	1K	2	
R6184	ERD10TJ223	22K	1	
R6185	ERD10TJ103	10K	1	
R6186,6187	ERD10TJ223	22K	2	
R6509	EVNK6AA00B24	Variable 20K	1	
		Capacitors		
C6003	ECCD1H331K	Ceramic 50V 330P	1	
C6004	ECKD1H103ZF	Ceramic 50V 0.01	1	
C6005	ECEA1AS470	Electrolytic 10V 47	1	
C6006,6007	ECQM1H104JS	Mylar 50V 0.1	2	
C6008	ECEA50ZR1	Electrolytic 50V 0.1	1	
C6009	ECEA25Z3R3	Electrolytic 25V 3.3	1	
C6010-6012	ECEA1EN100S	Electrolytic 25V 10	3	
C6013,6014	ECEA1AS101	Electrolytic 10V 100	2	
C6017	ECEA1AS101	Electrolytic 10V 100	1	
C6018	ECEA1HS010	Electrolytic 50V 1	1	
C6019	ECQM1H472KZ	Mylar 50V 0.0047	1	
C6020,6021	ECKD1H102ZF	Ceramic 50V 0.001	2	
C6022	ECKD1H103ZF	Ceramic 50V 0.01	1	
C6023	ECEA1EN4R7	Electrolytic 25V 4.7	1	
C6026	ECEA1CS101	Electrolytic 16V 100	1	
C6027	ECEA1AS101	Electrolytic 10V 100	1	
C6028	ECEA1CS101	Electrolytic 16V 100	1	
C6029	ECEA1HS010	Electrolytic 50V 1	1	
C6032,6033	ECKD1H103ZF	Ceramic 50V 0.01	2	
C6035	ECKD1H103ZF	Ceramic 50V 0.01	1	
		Coil		
L6001	VLQ80W471K	470μH	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Complex Components (R)		
RX6001	EXBP88103K		1	
RX6002	EXBP88332K		1	
RX6003	EXBP88223J		1	
RX6004	EXBP86103K		1	
RX6005	EXBP84333J		1	
RX6006	EXBP84332K		1	
		Connectors		
P6001	VJP1146	10P	1	
P6002	VJP1141	2P	1	
P6003	VJP1145	8P	1	
P6004	VJP1188	4P	1	
P6005	VJP1145	8P	1	
P6006	VJP1142	2P	1	
P6007	VJP1146	10P	1	
P6008	VJP1145	8P	1	
P6009	VJP1143	5P	1	
P6010	VJP1141	2P	1	
P6011	VJP1144	6P	1	
P6012,6013	VJP1145	8P	2	
P6014	VJP1141	2P	1	
P6015,6016	VJP1142	3P	2	
P6017	VJP1188	4P	1	
P6209	VJP1141	2P	1	
		Miscellaneous		
	VSC0522	Heat Sink	1	
	XTV3+6FFX	Screw	1	

Ref. No.	Part No.	Part Name & Description		Pcs / Set	Remarks
		DEMODULATOR PRINTED CIRCUIT BOARD			
		Integrated Circuits			
IC701	BN5111B			1	
IC702	AN240P			1	
IC7001	AN5701N			1	
IC7002	AN5703			1	NV-7200E,EG
		Transistors			
Q701-703	2SC945A			2	
Q704	2SA733			1	
Q707	2SC945A			1	
Q7012	2SA719			1	NV-7200-E,EG
	2SA733			1	NV-7200-B
Q7017	2SC1684			1	NV-7200-E,EG
	2SA564			1	NV-7200-B
		Diodes			
D701	MA165			1	
D702	MA26T0			1	
D703,704	MA165			2	NV-7200-E,EG
D7010	MA165			1	
D7012	MA165			1	
D7013	μPC574JK			1	
D7030	MA165			1	
		Resistors			
R701	ERD10TJ821		820	1	
R702	ERD10TJ151		150	1	
R703	ERD10TJ102		1K	1	NV-7200- E,EG
	ERD10TJ222		2.2K	1	NV-7200- B
R704	ERD10TJ563		56K	1	
R705	ERD10TJ102		1K	1	NV-7200- B
R706	EVNK6AA00B23	Variable	2K	1	
R707	ERD10TJ102		1K	1	
R708	ERD10TJ102		1K	1	
R709	ERD10TJ272		2.7K	1	NV-7200- E,EG
	ERD10TJ222		2.2K	1	NV-7200- B
R710	ERD10TJ101		100	1	
R711	ERD10TJ152		1.5K	1	
R712	ERD10TJ153		15K	1	
R713	ERD10TJ821		820	1	
R714	ERD10TJ333		33K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R716	ERD25TJ225	2.2M	1	
R717	ERD10TJ102	1K	1	
R718	EVNK6AA00B14	Variable 10K	1	NV-7200-E,EG
	EVNK6AA00B24	Variable 20K	1	NV-7200-B
R719	ERD10TJ562	5.6K	1	
R720	ERD10TJ183	18K	1	
R721	ERD10TJ680	68	1	NV-7200-E,EG
	ERD10TJ221	220	1	NV-7200-B
R724	ERD10TJ470	47	1	
R725,726	ERD10TJ103	10K	2	
R728	ERD10TJ222	2.2K	1	NV-7200-E,EG
R730	ERQ12HJ220	22	1	⚠
R731	EVNK6AA00B24	Variable 20K	1	
R732	ERD10TJ153	15K	1	
R733	ERD10TJ222	2.2K	1	
R734	ERD10TJ333	33K	1	NV-7200-E,EG
R735	ERD10TJ332	3.3K	1	
R736	ERD10TJ391	390	1	
R737	ERD10TJ683	68K	1	
R738	ERD10TJ822	8.2K	1	NV-7200-E,EG
	ERD10TJ392	3.9K	1	NV-7200-B
R741	EVNK6AA00B24	20K	1	NV-7200-E,EG
R745	ERD10TJ222	2.2K	1	
R746	ERD10TJ101	100	1	
R748	ERD10TJ221	220	1	
R749	ERD10TJ333	33K	1	
R750	ERD10TJ103	10K	1	NV-7200-B
R754	ERD10TJ332	3.3K	1	
R755	ERD25TJ561	560	1	NV-7200-B
R756	ERD10TJ223	22K	1	
R757	ERD10TJ154	150K	1	
R758	ERD10TJ333	33K	1	
R759	ERD10TJ472	4.7K	1	
R7015	ERD10TJ103	10K	1	
R7020	ERG2ANJ102	1K	1	NV-7200-B
R7020	ERG2ANJ102	1K	1	NV-7200-E,EG
R7026	ERD25FJ121	120	1	NV-7200-E,EG
	ERD25FJ151	150	1	NV-7200-B
R7027	ERD10TG1102		1	NV-7200-E,EG
R7028	ERD10TJ103	10K	1	NV-7200-E,EG
R7029	ERD10TJ104	100K	1	NV-7200-E,EG
R7030	ERD10TJ273	27K	1	NV-7200-E,EG
R7034	ERD10TJ822	8.2K	1	
R7061	ERD10TJ103	10K	1	
R7062	ERD10TJ122	1.2K	1	
R7063	ERD10TJ104	100K	1	NV-7200-B
R7064	ERD10TJ393	39K	1	NV-7200-E,EG
	ERD10TJ103	10K	1	NV-7200-B
R7065	ERD10TJ333	33K	1	NV-7200-E,EG
		Capacitors		
C701	ECEA1ES4R7	Electrolytic 25V 4.7	1	NV-7200-B
C702	ECKD1H222ZF	Ceramic 50V 0.0022	1	
C703	ECKD1H103ZF	Ceramic 50V 0.01	1	NV-7200-B
C704-709	ECKD1H103ZF	Ceramic 50V 0.01	6	
C710	ECCD1H020CC	Ceramic 50V 2P	1	
C711	ECCD1H680JR	Ceramic 50V 68P	1	
C712	ECCD1H220JC	Ceramic 50V 22P	1	
C713	ECCD1H020CC	Ceramic 50V 2P	1	
C714	ECCD1H560KP	Ceramic 50V 56P	1	
C715	ECEA1HS010	Electrolytic 50V 1	1	
C716	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C717	ECKD1H103ZF	Ceramic 50V 0.01	1	
C718	ECQM1H823KZ	Mylar 50V 0.082	1	
C719	ECEA1CS100	Electrolytic 16V 10	1	
C720	ECKD1H102KB	Ceramic 50V 0.001	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
C721	ECEA50ZR33	Electrolytic 50V 0.33	1	
C722	ECEA1HS2R2	Electrolytic 50V 2.2	1	
C723	ECSZ25EF1	Tantalum 25V 1	1	
C724	ECKD1H103ZF	Ceramic 50V 0.01	1	
C725	ECEA1CS100	Electrolytic 16V 10	1	
C726	ECEA1EN3R3S	Electrolytic 25V 3.3	1	
C727	ECCD1H050DC	Ceramic 50V 5P	1	
C728	ECCD1H820JR	Ceramic 50V 82P	1	
C729	ECQM1H473KZ	Mylar 50V 0.047	1	
C730	ECEA1CS470	Electrolytic 16V 47	1	
C731	ECCD1H270JC	Ceramic 50V 27P	1	NV-7200-B
C733	ECEA1EN4R7S	Electrolytic 25V 4.7	1	
C734	ECKD1H103ZF	Ceramic 50V 0.01	1	
C735	ECQM1H123KZ	Mylar 50V 0.012	1	
C736	ECEA1CS471	Electrolytic 16V 470	1	
C737	ECCD1H560JC	Ceramic 50V 56P	1	NV-7200-E,EG
	ECCD1H470JC	Ceramic 50V 47P	1	NV-7200-B
C738	ECKD1H103ZF	Ceramic 50V 0.01	1	
C739	ECEA1CS100	Electrolytic 16V 10	1	
C740	ECEA1HN010S	Electrolytic 50V 1	1	
C743	ECEA1HSR47	Electrolytic 50V 0.47	1	
C744	ECKD1H103ZF	Ceramic 50V 0.01	1	NV-7200-E,EG
C745	ECEA1ES4R7	Electrolytic 25V 4.7	1	NV-7200-E,EG
C746	ECKD1H103ZF	Ceramic 50V 0.01	1	NV-7200-E,EG
C747	ECKD1H103ZF	Ceramic 50V 0.01	1	
C748,749	ECKD1H103ZF	Ceramic 50V 0.01	2	NV-7200-E,EG
C750	ECEA1ES220	Electrolytic 25V 22	1	
C752	ECCD1H220KC	Ceramic 50V 22P	1	
C753	ECCD1H220KC	Ceramic 50V 22P	1	
C755	ECKD1H561KB	Ceramic 50V 560P	1	
C756	ECCD1H151KC	Ceramic 50V 150P	1	
C757	ECCD1H150JC	Ceramic 50V 15P	1	
C758	ECCD1H820JR	Ceramic 50V 82P	1	NV-7200-E,EG
C760	ECKD1H103ZF	Ceramic 50V 0.01	1	
C7003	ECKD1H222ZF	Ceramic 50V 0.0022	1	
C7005	ECKD1H103ZF	Ceramic 50V 0.01	1	
C7006	ECEA1HS010	Electrolytic 50V 1	1	
C7023	ECKD1H103ZF	Ceramic 50V 0.01	1	NV-7200-B
		Coils		
L701	ELQSR82KB		1	
L703	VLQ80W270K	27μH	1	
L704	VLQ80W680K	68μH	1	
L705	VLQ80W560K	56μH	1	
L706	VLQ80W390J	39μH	1	
L707	VLQ80W220J	22μH	1	NV-7200-E,EG
	VLQ80W180J	18μH	1	NV-7200-B
L708	VLQ80W150K	15μH	1	
L709	VLQ80W221K	220μH	1	NV-7200-B
L710	VLQ80W220K	22μH	1	
L711	VLQ80W181K	180μH	1	NV-7200-E,EG
		Filters		
FL701	EFCS5R5MS3		1	NV-7200-E,EG
	EFCS6R0MS3		1	NV-7200-B
FL702	EFCS5R5MW3		1	NV-7200-E,EG
	EFCS6R0MW3		1	NV-7200-B
FL703	EFCA5R5MC3C		1	NV-70220E,EG
	EFCA6R0MC3A		1	NV07200-B

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Transformers		
T701	EULHLB473	47K	1	NV-7200-E,EG
	EULHLB471	470	1	NV-7200-B
T702	EIM5A721	720	1	
T703	EIV10E309A		1	
T704	EIV10E309B		1	
T705	EIS10E312A		1	
		Connectors		
P701	VJJ0020		1	
P702	VJP1142		1	
P704	VJP1143		1	
P713	VJP1142		1	
		Miscellaneous		
	VSC0478	Shield Case	1	
	VSC0479	Shield Case	1	
	VSC0480	Shield Case	1	
	TNV7701F2R	Tuner	1	NV-7200-E,EG ⚠
	ENV87509F2	Tuner	1	NV-7200B ⚠
		TIMER INDICATION SECTION		
		PRINTED CIRCUIT BOARD		
		Integrated Circuits		
IC7501	MN1405VXA		1	
IC7502	μPD1511C030		1	
IC7503	AN5010		1	
IC7510,7511	MSL915RS			
		Transistors		
Q7501	2SB641		1	
Q7502,7503	2SC945A		2	
Q7504	2SA988		1	
Q7505	2SB641		1	
Q7506-7508	2SD636		3	
Q7509	2SA719		1	
Q7510-7517	2SD636		8	
Q7518	2SB643		1	
Q7519,7520	2SB641		2	
Q7521	2SC945A		1	
Q7522	2SD636		1	
Q7540	2SA988		1	
Q7541-7543	2SD636		3	
Q7544	2SB641		1	
Q7545	2SC945A		1	
		Diodes		
D7502	RD5.6JB3		1	
D7503,7504	MA165		2	
D7505	MA522		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
D7506	MA165		1	
D7507,7508	RM1Z		2	
D7509	MA522VT		1	
D7510-7521	MA161C		12	
D7522,7523	MA165		2	
D7527	MA165		1	
D7542-7544	MA165		3	
D7545	RD10EB		1	
D7546	R7.5EB		1	
D7547	LN21RCPHLM		1	
D7548	MA165		1	
D7549	LN21RCPHLM		1	
D7551	LN31GCPUHLM		1	
D7552	LN5241GA		1	
		Resistors		
R7501	ERD10TJ392	3.9K	1	
R7502	ERD10TJ103	10K	1	
R7503	ERD10TJ393	39K	1	
R7504	EVNK6AA00B53	Variable 5K	1	
R7505	ERD10TJ102	1K	1	
R7506	ERD10TJ332	3.3K	1	
R7507	ERD10TJ103	10K	1	
R7508	ERD10TJ472	4.7K	1	
R7509	ERD10TJ224	220K	1	
R7510	ERD10TJ104	100K	1	
R7511	ERD10TJ104	100K	1	
R7512	ERD10TJ182	1.8K	1	
R7513	EVNK6AA00B54	Variable 50K	1	
R7514	ERD10TJ103	10K	1	
R7515	ERD10TJ103	10K	1	
R7516	ERD10TJ682	6.8K	1	
R7517	ERD10TJ273	27K	1	
R7518,7519	ERD10TJ103	10K	2	
R7520	ERD10TJ102	1K	1	
R7521	ERD10TJ104	100K	1	
R7522,7523	ERD10TJ272	2.7K	2	
R7524	EVNK6AA00B53	Variable 5K	1	
R7525-7532	ERD10TJ272	2.7K	8	
R7533	ERD10TJ224	220K	1	
R7534	ERD10TJ102	1K	1	
R7535	ERD10TJ472	4.7K	1	
R7536	ERD10TJ103	10K	1	
R7537	ERD10TJ102	1K	1	
R7538	ERD10TJ102	1K	1	
R7539	ERD10TJ563	56K	1	
R7540	ERD10TJ104	100K	1	
R7541	ERD10TJ223	22K	1	
R7542	ERD10TJ104	100K	1	
R7543	ERD10TJ104	100K	1	
R7544	ERD10TJ563	56K	1	
R7545	ERD10TJ152	1.5K	1	
R7546	ERD10TJ103	10K	1	
R7547,7548	ERD10TJ103	10K	2	
R7549	ERD10TJ102	1K	1	
R7550	ERD10TJ393	39K	1	
R7551	ERD10TJ103	10K	1	
R7552-7563	EWEU2A016B24	Variable 20K	12	
R7564	ERD10TJ332	3.3K	1	
R7565	ERD10TJ122	1.2K	1	
R7567	ERD10TJ103	10K	1	
R7580,7581	ERD10TJ273	27K	2	
R7582	ERD10TJ473	47K	1	
R7584	ERD10TJ104	100K	1	
R7585-7593	ERD10TJ271	270	9	
R7594	ERD10TJ223	22K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R7595	ERD10TJ102	1K	1	
R7596	ERD10TJ563	56K	1	
R7597	ERD10TJ682	6.8K	1	
R7598	ERD10TJ333	33K	1	
R7599	ERD10TJ104	100K	1	
R7600	ERD10TJ102	1K	1	
R7601	ERD10TJ223	22K	1	
R7602	ERD10TJ104	100K	1	
R7603	ERD10TJ102	1K	1	
R7604	ERD10TJ103	10K	1	
R7606	ERD10TJ223	22K	1	
R7607	ERD10TJ103	10K	1	
R7611,7612	ERD10TJ102	1K	2	
		Capacitors		
C7501	ECEA1HK010	Electrolytic 50V 1	1	
C7503	ECCD1H101K	Ceramic 50V 100P	1	
C7504	ECKD1H103ZF	Ceramic 50V 0.01	1	
C7505	ECEA1HK2R2	Electrolytic 50V 2.2	1	
C7506,7507	ECCD1H330J	Ceramic 50V 33P	2	
C7508	ECEA1CS100	Electrolytic 16V 10	1	
C7509,7510	ECQM1H182KZ	Mylar 50V 0.0018	2	
C7511	ECEA1CK100	Electrolytic 16V 10	1	
C7512	ECEA1CS330	Electrolytic 16V 33	1	
C7513,7514	ECEA1CS100	Electrolytic 16V 10	2	
C7515	ECKD1H103ZF	Ceramic 50V 0.01	1	
C7616	ECEA1CS100	Electrolytic 16V 10	1	
C7517	ECKD1H102KB	Ceramic 50V 0.001	1	
		Connectors		
P7501	VJP1143	5P	1	
P5702,7503	VJP1142	3P	2	
P7504	VJP1148	2P	1	
P7505	VJP1150	5P	1	
P7506	VJP1145	8P	1	
P7507,7508	VJP1188		2	
		Switches		
SW7501-7503	VSP0111		3	
SW7504	ESD14167		1	
SW7505-7512	EVQQJ104K		8	
SW7513	ESD14125		1	
SW7514,7515	EVQQJ104K		2	
SW7516	ESE153A		1	
SW7517-7528	ESD14137		13	NV-7200-E,EG
		Complex Components (R)		
RX7501	EXBP85103J		1	
RX7503	EXBP84473J		1	
		Crystal		
X7501	VCR0031		1	
X7502	VSX0082		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Miscellaneous		
DP7501	VSL0005	Timer Indicator	1	
	VGQ0225	Timer Indicator Holder	2	
	VMX0294	Spacer	2	
		RF CONVERTER UNIT		
		Integrated Circuits		
AM-1	PCBA016V	Audio Modulator	1	
VM-1	PCBA195V	Video Modulator	1	
U0-1	U0CA009V	UHF Oscillator	1	
		Transistors		
Q1	2SC1215R		1	
		Diodes		
D1,2	1SS86		2	
D3	RD56EB		1	
D4	MA26W		1	
		Resistors		
R1	ERD10TJ101	100	1	
R2	ERD10TJ270	27	1	
R3	ERD10TJ390	39	1	
R5	ERD25TJ101	100	1	
R6	ERD10TJ220	22	1	
R7	ERD10TJ680	68	1	
R8	ERD10TJ471	470	1	
R9	ERD25TJ680	68	1	
R10	ERD10TJ220	22	1	
R11,12	ERD10TJ331	330	2	
R13	ERD10TJ102	1K	1	
VR1	9PNXB13	Variable 1KB	1	
VR2	EVN38CA00B13	Variable 1KB	1	
VR3	9PNXB15	Variable 100KB	1	
VR4	EVMG5GS05B15	Variable 100KB	1	
		Capacitors		
C1	ECCD1H050C	Ceramic 50V 5P	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
C2	ECCD1H150KC	Ceramic 50V 15P	1	
C3	ECCD1H020CC	Ceramic 50V 2P	1	
C4	ECEA1AS470	Electrolytic 6V 47	1	
C5	ECKD1H102PF	Ceramic 50V 1000P	1	
C6	VCY25473M1	Semiconductor 47n	1	
C7	ECCD1H330KT	Ceramic 50V 33P	1	
C8	ECKD1H102PF	Ceramic 50V 1000P	1	
C9	ECEA1HS010	Electrolytic 50V 1	1	
C10	ECKD1H103PF	Ceramic 50V 10n	1	
C11	VCY25473M1	Semiconductor 47n	1	
C12,13	ECCD1H050C	Ceramic 50V 5P	2	
C14	ECCD1H271K1	Ceramic 50V 270P	1	
C15	ECCD1H680KC	Ceramic 50V 68P	1	
C16	ECCD1H330KT	Ceramic 50V 33P	1	
C17	ECEA1AS470	Electrolytic 6V 47	1	
C19	ECEA1AS100	Electrolytic 6V 10	1	
C20	ECCD1H221K1	Ceramic 50V 220P	1	
C22	ECEA1HS010	Electrolytic 50V 1	1	
C24	ECKD1H102PF	Ceramic 50V 1000P	1	
C25	ECCD1H101K1	Ceramic 50V 100P	1	
C26	ECCD1H470K1	Ceramic 50V 47P	1	
C27	ECCD1H101K1	Ceramic 50V 100P	1	
C28	ECEA1AS2R2	Electrolytic 6V 2.2	1	
C29	ECEA1AS330	Electrolytic 6V 33	1	
C30	ECEA1CS471	Electrolytic 25V 470	1	
C31	ECCD1H080J1	Ceramic 50V 8P	1	
C32	ECKD1H103PF	Ceramic 50V 10n	1	
C33	ECKD1H102PF	Ceramic 50V 1000P	1	
C34	ECEA1AN330	Electrolytic 6V 33	1	
C35	ECCD1H390K1	Ceramic 50V 39P	1	
		Coils		
L1-4	LB162609VU02		4	
L5	LR3H5R6K	5.6μH	1	
		Transformers		
T1,2	VLT0093	Oscillation	2	
T3	BRNA010V		1	
		Connector		
	VJP1143	5 Pin	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Infrared Transmitter		
		Integlated Circuit		
IC1	MN6027A		1	
		Transistors		
Q1	2SD636			
Q2	2SD638			
Q3	2SB641			
		Diodes		
D1001, 1002	SE303A	L.E.D	2	
D1003	MA150		1	
D1004	LN230RA	Infrared L.E.D	1	
		Resistors		
R1001	ERD25TJ332	1/4W 3.3k	1	
R1002	ERD25TJ470	1/4W 47	1	
R1003	ERD25TJ223	1/4W 22k	1	
R1004	ERD25TJ1R0	1/4W 1	1	
R1005	ERD25TJ221	1/4W 220	1	
		Capacitors		
C1001	ECKD1H471K	Ceramic 50V 470p	1	
C1002	ECKD1H121K	Ceramic 50V 120p	1	
C1003	ECEA1HKR47	Electrolytic 50V 0.47	1	
C1005	ECEA0JS101	Electrolytic 6.3V 100	1	
		Miscellaneous		
X1001	CSB420PB1	Oscillation	1	